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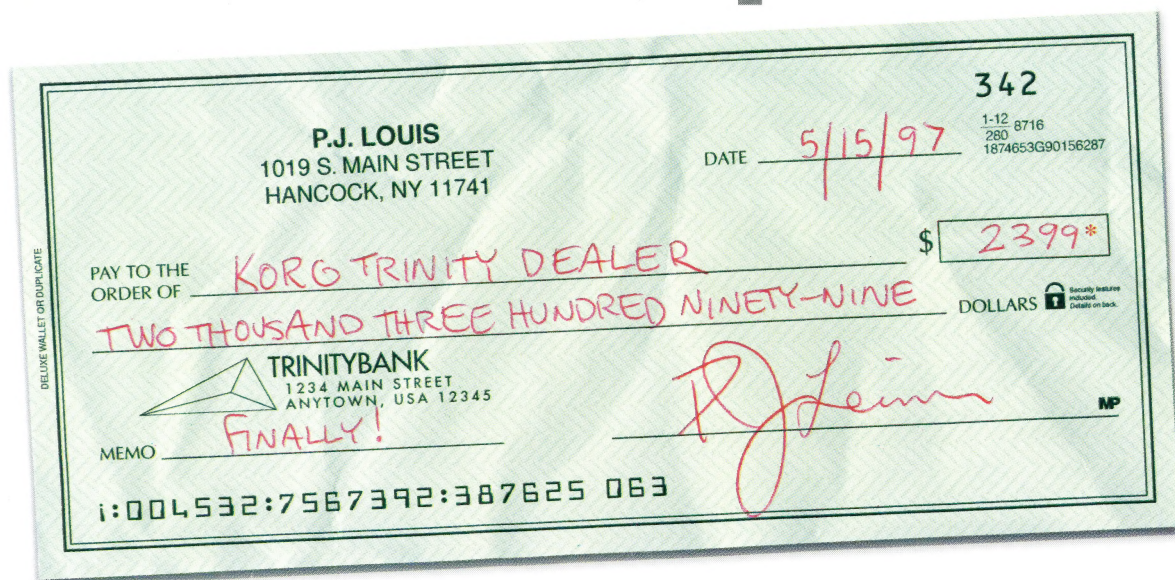
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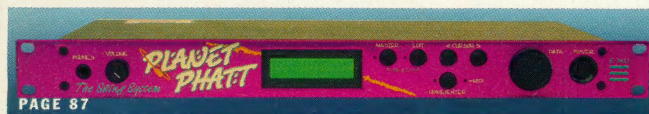
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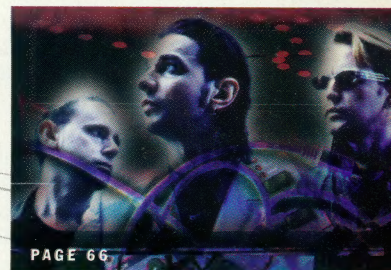
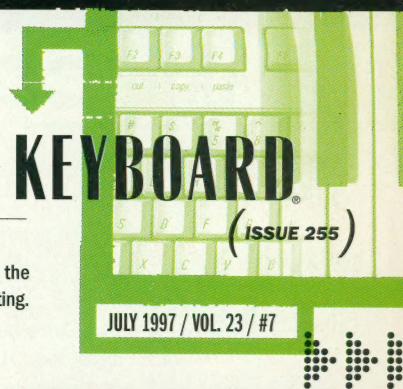
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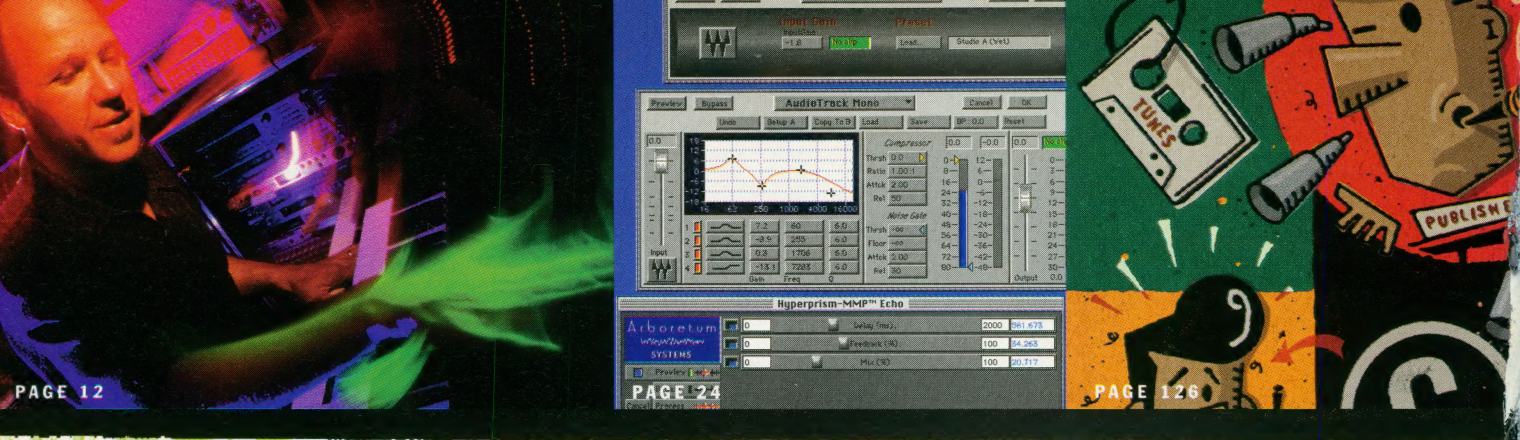
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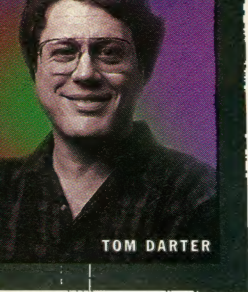
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TOM DARTER

from the editor

Finding the Angles

Most lives change direction a number of times. Some of these changes are minor course corrections, but some are major shifts. You seem to be aimed in one direction (or perhaps in no direction), and then something happens that points out a whole new path.

I was in a music theory class as a sophomore in high school. As our final assignment in the spring, the teacher told us to write a piece of music. I came back next week with the beginnings of the assignment — a string quartet in a quasi-Mozart style. Owen Goldsmith, the teacher then and still a good friend, said (more or less; I don't remember the exact words), "Well, that's fine, but I wanted you to write something of your own, not an imitation of someone else."

Now, here's the thing — it had never occurred to me to do this. All of the other assignments had been exercises (four-part harmony in the style of the Bach chorales, figured bass elaborations, and the like); I thought this one was supposed to be a longer version of the same sort of thing. I had been playing piano for a number of years by then, and spent time almost every day "noodling" around, but that didn't seem at all like writing music.

Anyway, I went home and wrote four short pieces for woodwind quartet. The next spring, these *Sketches* were performed during a contemporary music festival at San Jose State. Thanks to Owen's assignment (and his reaction to my first feeble effort), I discovered that writing music was something one could do, and found out that it was a direction I wanted to take.

Before "discovering" that it was possible (or maybe that it was okay) to write music, things were cloudy. I knew I wanted to be involved in music, but didn't know *what* to do. I played a lot of piano, but was pretty sure I didn't practice enough to be a concert pianist. (Other options, such as rock band, jazz combo, and experimental electronic group, appeared on the horizon later, but they weren't in sight during my high school years — and, of course, the idea of being the editor of a music magazine was a couple of mountain ranges away.)

A few years ago, I participated in what became a direction change for someone else. One evening, with a number of staff members gathered informally around a baby grand piano in a hotel suite, I played a few short piano pieces that I had written for friends' birthdays. Some time later, associate editor Greg Rule told me that the idea really struck

him, and he decided to write a piece for his wife's birthday — he had never thought of composing before. One thing led to another. Now Greg, whose main musical involvement used to be as a drummer, is primarily a composer and producer (check out some of his tracks as Bonehead).

By the way, I take no credit for Greg's becoming a composer/trackmeister. I was just part of a circumstance that showed Greg a new angle to his path in life. His openness is what allowed him to see the new direction.

That's the real point here: Staying open to the possibility of new directions. Many people, once they discover their "path" in life, stay focused on that narrow groove with a determination that would make any dog proud. I like to think that musicians are a more flexible bunch, in general. I like to think that new musical experiences can provide a subtle (or not-so-subtle) push in a new direction — more new angles.

I know how this can work (again) from personal experience. As a freshman in college, I thought I knew the kinds of music I wanted to do. I had a pretty broad range of listening material, from Bach and Bartók to the Beatles and Benny Goodman, and felt pretty comfortable with my range of musical interests. There were two concerts that year, though, that changed the whole picture. In the fall, I caught the Charles Lloyd Quartet, which featured a young pianist named Keith Jarrett. Then in the spring, Ravi Shankar and Alla Rakha came to town. Thanks to those two concerts, the relationship between composition and improvisation shifted forever in my musical consciousness. From there it was just a few steps to gamelan music, the recordings of Ornette Coleman and Albert Ayler, and the writings of John Cage.

I think of moments like these as musical kicks in the head — not necessarily the sudden illumination of a previously hidden direction, but suggestions of ways to broaden the path (and the vision of the traveler on the path). I like being surprised, and I recommend it to all of you. Leave yourself open to the breadth of fresh hear.

• • • • •

Jeff Rona had to skip his Reel World column this month; in addition to his regular hectic schedule as composer for *Profiler* and *Chicago Hope*, he signed on to score two episodes of Robert Altman's mini-series *Gun*. He'll be back next time (with some new stories to tell, I'm sure). ■

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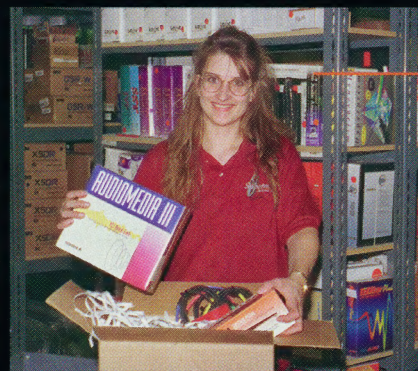
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Another Peek at Peak

Reading Jim Aikin's review of BIAS Peak [May '97], I got the feeling he was a little underwhelmed by the program. I've been using Peak for about four months now (since about the time Alchemy and the new Digilnit completely stopped getting along on my Mac), and it's turned out to be a great tool — especially since version 1.5 was released. While I certainly agree with Jim that it "doesn't restore sanity and order to the world of Macintosh audio" (I really wish something would), I also think there are a few things in the review that aren't completely accurate.

The problem he describes in the pitch-shifting algorithm — where it takes a moment to "kick in" at the beginning and end of the selected region — isn't a bug, it's what happens when you leave the blend feature turned on. If you don't want the DSP function to fade in or out, you just turn blending off. However, DSP blending turns out to be one of Peak's nicest features. Peak extends this concept to the Premier plug-ins, giving you the ability to blend them or use a separate envelope to fade them in and out. This is a great tool when you're trying to smooth out samples — for instance, when you need to EQ just a small trouble area in a loop. Peak's blend envelopes let you do these kinds of subtle edits without the clicks and pops you would otherwise get where the effect turns on and off.

As for Jim's concerns about the interface (wishing he could do more with the transport, had screen window buffers, etc.), I know how he feels. I have my own set of interface features that I'd like to see in Peak. Unfortunately, almost none of them are the same as Jim's. Therein lies the problem for software developers. They have to be selective about what they address first. I can say that BIAS has been very good about providing updates, and really seems responsive to suggestions.

I find the reviews in *Keyboard* very valuable (and sometimes very entertaining), and I often consult them before buying new gear. But I also think it's difficult to get comfortable with a new piece of software under the best circumstances, let alone with a deadline looming. You guys don't have the luxury of spending months using a program daily before you write your reviews. I just felt that I might not have seriously considered Peak if I had read the review and never seen the program. Since my experience with it has basically been very good, I feel it's well worth a look for anyone interested in digital audio editing.

Scott Plunkett
via Internet

No Workstation Is an Island

Forget, for a moment, that I spent a fortune on a Korg Trinity Pro X with all options installed. Forget for a moment that I spent hours of expensive studio time trying to sync it with something as common as an ADAT. Forget for a moment that nobody wants to deal with this. Forget all that — well, I'm trying hard.

Since the Trinity's HD recording option only provides four tracks, I have copied a sequence two or three times, so that I could, for instance, put guitar overdubs on the first sequence and vocals on the next. Of course, I can't hear the guitars when recording the vocals and vice-versa, but it certainly should be something that I should be able to sync myself out of, once I get to a suitable studio.

Big mistake! First of all, the Trinity must be the master. I already knew that, since it says so in the manual. But since the

Trinity boasts ADAT [digital audio connector] compatibility, I didn't anticipate any problems in transferring my audio tracks to ADAT. Much to my surprise, the Trinity only transmits MIDI clock, and that's the only sync code that the ADAT can't read. I'm baffled! How can Korg create such a great machine and then give it MIDI software that I'd expect to find in keyboards from Toys 'R Us?

I ended up transferring my HD tracks to ADAT on the fly — a very time- and money-consuming effort. I felt ridiculous since I had already spent hours moving takes back and forth in the Trinity to give them the right feel. I talked to my Korg dealer here in Denmark about the problem, but the reply was, "Sorry, folks." They weren't willing to look into the matter, let alone do something about it.

Olav Christensen
Denmark

[Check with some other studios. You may be able to find one with a sync box that can input MIDI clock and output MTC. The main requirement is that the MIDI start command cause MTC to begin at a specific time location. Some high-end software sequencers, such as Steinberg Cubase, can perform this translation. Essentially, you'll still be freewheeling, but at least you can get the ADAT to start at the same time as the sequencer. Since you're not using your own ADAT, however, it may be easier to find a studio with a decent computer-based multitrack hard disk recorder. Flying your audio tracks into a computer should be extremely simple, as long as you start each take with some sort of brief audio click. You can line the clicks up visually and be done in time for a cup of coffee before the engineer shows up.]

The Solitary Digit

After reading articles for months on the explosion of MDM and [stand-alone] hard disk recorders, I'm a bit surprised that anyone would still be plunking down thousands of dollars on computers and soundcards. *Keyboard* columnist Craig Anderton imparted good advice months ago on the new samplers — their megapolyphony and the fact that a number of them can be maxed out at 128Mb of memory. Why then would you want to invest in a 16-track recorder?

I will soon be getting an E-mu E4X and, after selling some of my blood, will max it out at 128Mb. At a 32kHz sample rate, that's 1,040 seconds, or 17.33 minutes of absolutely fantastic stereo sampling time!

MIDI slop and daisy-chains are not anything to worry about. Do what all the third-party sound developers do: Create your drum loops in categories. A bar of kick, a bar of hi-hat, snare with reverb in another loop, and so on. Then start with your synth lines. Bounce them to your DAT to sample back, and assign the line to a key to be played just like a drum loop.


You can do incredible sequences with one-finger playing. Why complicate your creativity with so much software, learning curves, and everything else when you can have such complex performances assigned to various keys for one-finger playing?

Michael Godfrey
St. Louis, MO

... Or No Digits

I'd like to suggest an instructional article for *Keyboard*: "How to Compose with Just a Pencil and Paper Away from the Piano." Many of the greatest composers composed this way. Even though some would argue that notation is not part of a creative process, I disagree. Just as you can tell that someone probably composed something sitting with a guitar or piano just by the sound of it, so you can tell the sound of music written this way —



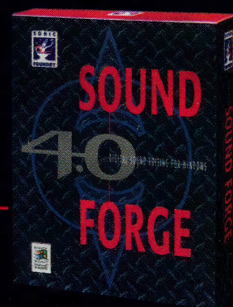


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kind of like when you hear someone very well educated speak. They speak written English, not spoken English.

The obvious problems with writing away from the piano: (1) You're separated emotionally from what you're writing. (2) You draw pencil dots for three hours, which seems like a lot of music, but then you discover it's only two minutes. (3) Hearing precisely what you're writing. (4) The element of chance discovery that you have when improvising is gone.

Your instructional articles are so great that I would love to see you write about this.

Steve Bingham
via Internet

Use & Abuse of Digital Audio

Do the current sampling laws still require clearance for use of a sample, or can a person use a sample as long as the proper credits are given on the album and the publisher is notified? Do you have to clear a rhythmic sample from a song (such as a drum loop from a recording)?

Brian K. Sullivan & John M. Mitchell
via Internet

[Private, recreational use of samples requires no clearance, but if you're planning to release your recording commercially, you must get clearance. If you use soundware CDs intended for sampling rather than sampling from music CDs, check with the company that makes the CD. In most cases, they will expect you to contact them and get approval before releasing

your song, but this is usually a formality, and no additional payment is required. If you sample from a music CD, grit your teeth and be prepared to be refused permission, or asked to pay an exorbitant license fee for the usage.]

A Rose by Any Other Name

On page 13 of your April issue, one of the bands listed in World View News is called Voight Kampff. My problem is this: I have been using the term "Voigt Kampff" as the title of my music project for three years. It's on my cassettes, my J-cards, sampled into my music . . . hell, it's stencilled onto my M1.

I know Voight Kampff, and Voigt Kampff appropriated the term from the same place, but which of us has the most claim to it? I personally can mistake it for my own name, and I have too much work and money invested in it to simply change it.

Jacob R. Ross
via Internet

[Check with a good entertainment attorney, and don't waste a minute. Keyboard's editors are not qualified to dispense legal advice, but here's our layperson's understanding of the situation, for what it's worth: A band name needs to be protected as a service mark (a type of trademark) in the geographical area where you plan to use it. For a national band, you need a nationally registered trademark. If you're currently using a name in your own local or regional area, you may already have a common-law trademark, which means that other

bands can't use your name in your area. (In some states, state law supersedes common law.) But by the same token, if your career should take off, you won't be able to use your name in another band's local area. Your best protection is to register your name with the U.S. Trademark Office; registration currently costs \$245. If another band has already registered the same name, you won't be allowed to register it. You can conduct a search for conflicting names before applying for the trademark. The search will cost money, but if you're thinking of starting a new band (or giving an existing band a new name) you can do some preliminary searching for free. Look in the Phonolog (available at record stores) and in the Billboard International Talent & Touring Directory, for example. A large public library will also have records that you can search.

[You can learn a lot more on this subject by using an Internet search engine. Point your browser to www.altavista.com, for instance, and submit an advanced search query with criteria such as: "band name" AND (trademark OR protect).]

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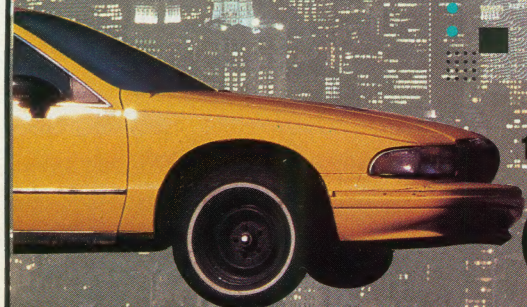
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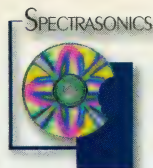
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TRANS AM

influences remain in their music; they're just not really as conscious of it."

Before they thought of mixing techno with their rock, and after kicking out their singer, Trans Am experienced a low period. A Casio once buried in the basement and an admiration for Kraftwerk brought them out of musical depression. "It was almost a crisis," remembers Nathan, "in that we were trying to live together, but we were all in different colleges. We decided to live together this one summer to try to write songs. Before that, we had a limbo period, where we weren't sure what we were doing, and we had a lot of really bad recordings, pre-keyboard experimentation." Nathan broke down and bought batteries for his Casio SA-21. As soon as the little plastic warrior lit up, the guys were re-inspired. "In a week, we'd written three songs using the keyboard. Essentially, it was just new sounds that we hadn't heard used very much. It was something a little bit fresh injected into what we were trying to do."

Rumor has it these guys are 100% Casio-lovers, but don't believe the hype. They have Casiotone a MT-40 as well as the SA-21, but they've also got a Roland Juno-60 and a Crumar Orchestrator II, which, Nathan says, "is probably the heaviest keyboard I've ever lifted." Then there is the Alesis D4 module (triggered by the Drum Tech rimKAT, now called the Rim Pad) and a Boss Doctor Rhythm drum machine, both played through a Trainer guitar amp. During one song onstage, guitarist/keyboardist Phil Manley even samples drummer Sebastian Thompson live with a Gemini PDM-6008 sampler and plays it back through his amp.

All this gear talk drives them crazy. On their recent European tour, they taped over their gear brand-names. "In the post-rock world," gripes Nathan, "so many people are into gear and brands, which is obviously important, but maybe not the only thing that's important. It gets sort of annoying after a while. You'll have your stuff set up and they'll just walk up and look and see what you have. We taped over everything so we could foil the gearheads."

—Kylē Swenson

As the popularity pendulum swings back and forth from guitar rock to electronic dance, Trans Am tries not to fall off the invisible fence that separates the two. Now together six years, the instrumental Maryland trio composed their second album, *Surrender to the Night*, with tin-can drum 'n' bass rimKAT beats, Snoop Dog gangsta rap synth (complements of a borrowed Moog), and grating guitar fuzz overdriven through a 4-track, among other unlikely combinations.

With such a musical mishmash, they're surprisingly not timid about admitting their real influences. Bassist/keyboardist Nathan Means scolds those not-so-honest bands out there: "People seem to invent their influences with various cool bands to be influenced by. Inevitably, in any sort of alterna-rock magazine, there's like three bands that list MCS and Velvet Underground as their influences. And I don't doubt that they like those bands, but I think that a lot of those kids around our age [20-something] grew up listening to classic rock, like Chicago or Led Zeppelin, and I think those

WIDESPREAD PANIC



On *Bombs and Butterflies* (Capricorn), Widespread Panic succeeds in translating their live, improvisational vibe to the studio. "We're not a media entity," asserts keyboardist John "Jo-Jo" Hermann (pictured right) who has sweetened the Athens, Georgia band's Southern-Rock sound since their third album. "We play live." Hermann first connected with the Panic when his previous band once filled their opening slot on a Southern U.S. tour.

A genuine respect and feeling of family unity thrives within Widespread Panic, providing an atmosphere from which spontaneous road jams erupt. "Just knowing that we can go up there live and take chances is the key that keeps it loose and fun," Hermann relates. The family spirit affects the songwriting process as well. "It's spread pretty evenly," he says of the writing duties. "We all play a role. We'll bring the songs in half-baked and everybody comes up with their own parts."

Influenced by Professor Longhair and the Doors' Ray Manzarek, Hermann likes to stretch out atop a vintage rig. "I don't use any synthesizers. I've got a Wurlitzer, Farfisa, Hammond B-3, and Clavinet. That funky Clav just fits right in with our grooves."

Despite an ever-changing musical climate, Hermann's forecast calls for steady weather. Asked where he sees the band a decade from now, he predicts, "I have a feeling we'll still be going around doing the same thing." —*Theo Wilhelm*



keyboard of the month



This funky, tattered instrument earned Keyboard of the Month honors because, well, we feel sorry for it... and also because owner Matt Chizmo claims to have scored it for \$2 at a garage sale in Albuquerque, NM. "It doesn't have an on/off switch," Matt tells us, "just a power cord. When you plug it in, you can hear what sounds like a small fan start, and after a few seconds it will play. It sounds like an accordion, or a really big harmonica. It measures about 14" wide and about 9" deep. The keys are really skinny."

Further clues about the instrument's origin can be found by flipping it over. "If you look at the bottom, it says 'Made In West Germany,' and the parts are all hidden inside a metal shell." Hmm, is it ticking?

"You can't tell from the photo, but the keys have grain in them, and the wood is really nice. It's not exactly hi-tech, but it's pretty cool." Indeed, Matt. Can we sample it? —*GR*

SPIN THIS. New age king Yanni returns to record stores with *In the Mirror*, "a collection of Yanni favorites," according to Private Music. The disc includes "a special version of 'Aria' from *Live at the Acropolis*."... **TRIBUTE TO JEFF** *Tribute to Jeff* by David Garfield and Friends is an all-star musical tribute to drumming legend Jeff Porcaro, who's life was tragically cut short in 1992 by a sudden heart attack. Jeff was only 38, but amassed an enormous and highly influential body of work in his short lifetime. Keyboardists on the disc include David Benoit, Michael Boddicker, Bill Champlin, Mike Finnigan, David Garfield, James Newton Howard, Greg Mathieson, Michael McDonald, Greg Phillinganes, David Paich, Steve Porcaro, Joe Sample, and Benmont Tench. And the lineup of singers, guitarists, bassists, drummers, horn players, and percussionists, is equally stellar. *Tribute to Jeff* is currently available as a Japanese import on the Creatchy/Sweeca label, but it's headed for a U.S. release late this summer on Zebra Records. If you can't wait till then, snap up a copy by calling Audiophile Imports at 410-628-7601. . . . In other Creatchy Records news, look for these classic reissues now available via Audiophile Imports: *Los Lobos* self-titled debut, *Karizma Arms of Love*, David Garfield & Friends *L.A. Keyboard Project and Recollections*, Steve Tavaglione *Blue Tav*, and Michael O'Neill *True Love*. . . . The Australian duo of Darren Hayes and Daniel Jones, collectively *Savage Garden*, are making a splash on the charts with "I Want You," the first single off their eponymous debut (Columbia). If you like your pop served with a double sugar coating, this has your name on it.

ON TOUR. Keyboard tech Lindsay Vannoy dropped us this bittersweet email recently about the current Tina Turner tour: "I'm in Australia right now working on Tina Turner's *Wildest Dreams* world tour. Tina has [had] three keyboard players in her band: Hammond/synth player Ollie Marland, synth/percussion/sax player Timmy Cappello, and piano player Kenny Moore. On a sad note, Kenny, pianist with Tina for over 18 years, passed away last week of an apparent heart attack." At press time, the tour was in Australia, and heading to the States. . . . Just in from Allstar News (www.allstarmag.com): "As if debuting at No. 1 in about 18 countries with *Pop* isn't impressive enough, U2 have scored another personal coup. This time it's about their

Do you have an unusual keyboard or rig? Send a clear color photo of your setup, along with a phone number or email address where you can be reached, to Greg Rule, Keyboard, 411 Borel Ave., Ste. 100, San Mateo, CA 94402.

forthcoming, mammoth 62-city, 20-country 'PopMart' world tour [which kicked off April 25 in Las Vegas with **Rage Against the Machine** as the opening act]. Gross ticket sales in North America have already surpassed U2's own North American sales record set during 1992's 'Zoo TV' tour. More than 1.5 million tickets have already been sold."

PROG REPORT. Atlanta correspondent Wheat Williams writes: "Remember **Chris Buzby** from that great, late, lamented Philadelphia prog band **Echolyn** [featured in *Keyboard*'s Oct. '95 issue]? He has a new band called **Finneus Gauge**, who are recording a new independent album." Buzby himself sent us a follow-up email with more on the group: "Finneus Gauge is a five-piece band with an eclectic blend of jazz, rock, fusion, funk inflections. We're preparing an independent domestic release of our debut *More Once More*, slated for early June of this year." A European distribution deal is also in the works. Joining Chris (keyboards, backing vocals) are members **Scott McGill** (guitars), **Jonn Buzby** (drums, backing vocals), **Laura Martin** (lead vocals), and **Chris Eike** (bass). Once the album has been released, Buzby says he hopes to book selected shows in the eastern U.S. and Canada in late summer. For more info, contact P.O. Box 194, West Point, PA 19486; email: finneus-gauge@juno.com; Web: <http://ghostland.com/finneus.html>.

THEREMIN FESTIVAL

From the Electronic Music Foundation: "Thereminists **Lydia Kavina** and **Eric Ross** will wave their arms in the air. **Robert Moog**, **Elliott Schwartz**, **Albert Glinsky**, and **Olivia Mattis** will talk June 20 and 21 at the Portland Performing Arts Center, Portland, Maine." For more info contact EMF at 116 North Lake Ave., Albany, NY 12206; 518-434-4110, fax 518-434-0308; email: EMF@emf.org; Web: www.nashville.net/~theremin/festival.html or www.emf.org.

DAVID FRANK

Since scoring big with the **System** over a decade ago, David Frank has turned his attention from the concert stage to the recording studio. He has a long string of hits to his credit (see below), but most recently he co-produced tracks for the female pop vocal trio **Wild Orchid** (RCA), as well new material for **Omar** (featured in *Keyboard*'s Oct. '95 issue).

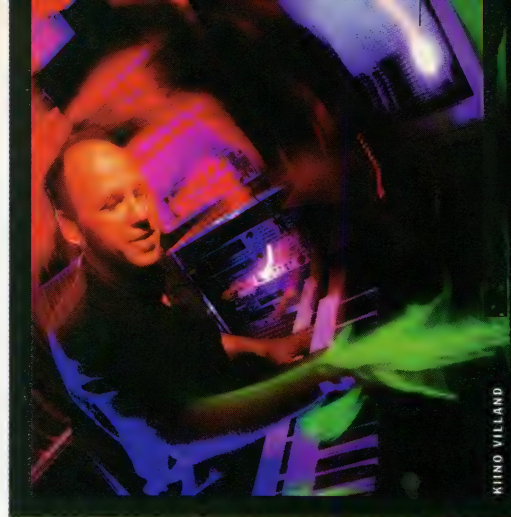
In case you missed out the first time around, here's a quick rewind. David Frank and singer **Mic Murphy** (collectively the **System**) helped lay the foundation for contemporary electronic pop music with their intelligent songwriting and up-front, unapologetic use of synths. Contrary to popular belief, however, the **System** was not named after Oberheim's pre-MIDI sequencing system. "We predated the Oberheim **System**," Frank tells us.

The band's 1982 debut single, "You Are in My System" (Atlantic) quickly became the rage on both the dancefloor and urban-formatted radio. And it was easy to see why; Frank's funky synth tracks were second to none at the time. "In many ways," he told *Keyboard* in 1988, "the sound of the **System** comes down to lead bass and vocals." And what bass lines he laid. Fat, punchy analog tracks were the name of the game, supplied by Minimoogs and early Oberheim synths.

Four **System** albums followed the hit debut: *Experiment*, *The Pleasure Seekers*, *Don't Disturb This Groove* (the title track went to #1 R&B and #3 pop), and *Rhythm and Romance*.

Throughout the remainder of the '80s and into the '90s, Frank spun his **System** experience into a highly successful production and performance career. Onstage, he backed such luminaries as ex-Eurythmics singer **Annie Lennox**; you can catch him on Annie's *Live in Central Park* CD and video (Arista). And in the studio, he and his **System** partner **Mic Murphy** guested on such hits as Chaka Khan's version of Prince's "I Feel for You," Mtume's "Juicy Fruit" (both million-sellers), and on movie soundtracks for two Eddie Murphy blockbusters: *Beverly Hills Cop* and *Coming to America* (the title track went Top 10 pop).

As for his recent work, Frank gave us an insider's tip about the new **Omar** album. "We didn't use a lot of digital signal processors. We preferred to record



the acoustic sounds and vocal tracks completely dry. But we did use some of the older effects like flangers and envelope followers on the keyboards." Hear firsthand what he's talking about on the **Omar** disc, *This Is Not a Love Song*, which should be in record stores soon.

Speaking of keyboards, Frank's studio houses a mouth-watering mix of modern and vintage gear: Oberheim OB-8, Minimoog, Fender Rhodes Bass, Hohner D6 Clavinet, Clavia Nord Rack, Wuritzer Electric Piano, and a Roland JV-1080 module. "I just bought a Roland JP-8000," he says, "and it's really cool." Controlling much of the synth action is a Power Macintosh — with a Digidesign Audiomedia III PCI card installed — running Opcode Vision and MOTU Digital Performer. A Sony/MCI JH-24 analog tape machine is Frank's non-digital recorder of choice.

David Frank has seen many a trend come and go. Comparing the present to the past, he offers: "If an aspiring performer or producer didn't have access to a good band [a couple of decades ago], they were pretty much up the creek. The first real innovation to address that was the multitrack recorder. But even then, unless you were proficient on more than one instrument you were still in trouble. I'm thankful that I'm living in a time when, thanks to technology, anything is possible."

News flash: Be on the lookout for a **System** reunion CD due out later this year on Avec/BMG. —Ed Hogan

For more on David Frank, peruse these *Keyboard* back-issues: May '86, Feb. '88, Oct. '89. He was also the subject of three Jeff Rona columns: July, Aug., and Sept. '92. To order back-issues, call 800-444-4881.

bedroom of the month



Okay, we're stretching it a bit here, but when 14-year-old **Jeffrey Mosser** of Waseca, Minnesota, sent us this shot of his custom-painted bedroom wall, we couldn't resist. That's Jeffrey, hunkered over his keyboard rig at far left. "In the picture I'm working on my latest song, 'Chicken Liver,'" he tell us, "which I played at our school talent show." Jeffrey has taken piano lessons since age seven, and currently plays keys in his school's jazz band. He's also the eighth grade student council president.

Way to go, Jeffrey. And be sure to send us a copy of "Chicken Liver" when it's mixed. —GR

(plug'n]

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READER SERVICE NO. 8

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SYNTHS ON FILM. Cleopatra Pictures, a subsidiary of the Cleopatra Label Group, is beginning production on *Rave*, a documentary look at the burgeoning worldwide electronica scene. The film will be directed by pioneering underground filmmaker **Jonathan Reiss**, whose filmography is highlighted by the award winning shorts *A Bitter Message of Hopeless Grief* and *The Will to Provoke*, both of which have screened in festivals, theaters, and cultural centers throughout the world. Reiss has also directed a number of highly stylized music videos for bands such as **Nine Inch Nails**, **The Black Crowes**, and **Type O Negative**, to name a few. In the spirit of such landmark music documentaries as *The Decline of Western Civilization*, *Urgh! A Music War*, *Wild Style*, and *UKDK*, *Rave* will feature performance footage and interviews with both new and developing artists as well as some of the biggest names in the world of electronic music, tentatively including the **Chemical Brothers**, **Prodigy**, **Orbital**, **Underworld**, and **Meat Beat Manifesto**. The film will also provide a behind-the-scenes perspective through interviews with industry insiders such as rave and concert promoter **Philip Blaine**, Los Angeles DJ **Jason Bentley**, and booking agent **Gerry Gerrard**, among many others. Production of *Rave* commenced at the recent Winter Music Conference in Miami. The film is tentatively scheduled for release in the fall of 1997. . . . In other interesting film news, **Iara Lee**, director of *Synthetic Pleasures*, along

AARON MOORE



Heard the one about the Chicago sanitation worker who blew off roadwork with Muddy Waters, Willie Dixon, and Howlin' Wolf in the '50s — then had to wait 40 years for his recording debut? Chi-town pianoman Aaron Moore knows the whole story.

"I just didn't have the time back then," shrugs the 68-year-old keyboardist. "Once the guys found out I could play, they'd always call. But I was workin' for the city of Chicago and I couldn't get away." Things have changed, though, since Aaron's mid-'80s return to form backing B.B. King and Bobby "Blue" Bland, his 1988 retirement as deputy commissioner at the Bureau of Sanitation (he worked his way up from truck driver), and the 1996 release of *Hello World* on Delmark. "Now I can go out," he grins, "and I

don't have to be back for work on Monday morning!"

Raised in a musical household in Greenwood, Mississippi, Aaron started playing piano at age 11. "My mother was a music teacher, so I *had* to play," he laughs. But Moore says it wasn't blues that originally tickled his fancy. "Oh, no — I didn't start playin' blues 'til I came to Chicago [in 1951]. I was playin' jazz: Count Basie, Fats Waller, Teddy Wilson. I used to play so much like Fats, people would call me 'Little Fats.'"

His move to the Windy City marked the end of Aaron's solo days, though he admits the transition to team player took awhile. "When I first hooked up with bands, it was rough for me to make the change. It was so different playin' single [solo]. The biggest difference is your bass. See, I had a real quick left hand, and I had to slow it down 'cause the band had a bass man. And if you don't give the bass man time to come in, you'll mess everything up."

Moore plays in all the right places on *Hello World*. His rumbling left-hand boogie bolsters rippling right-hand arpeggios and plenty of rockin' triplets. While "What Did You Do to Me" and "Castle Rock Boogie" betray the strong influence of Aaron's friend and mentor, Roosevelt Sykes, the rough-and-tumble "You Got Good Business" is an obvious nod to another hero, Memphis Slim. "I played with Slim lots of times," Moore confirms. "In fact, he broke my piano once! I had one of the first Wurlitzer 'lectric pianos — it was like a suitcase — and Slim came out to play it one night. Well, he was used to them big 'coustic uprights. He played really hard. But the Wurlitzer only had 72 notes, not 88, and Slim couldn't make his big stretch. So he started beatin' the keys on my little piano, and he stretched it all right — straight into the repair shop!" —Gregory Isola

UPPITY BLUES WOMAN

Ivory-poundin' Ann Rabson's solo debut, *Music Makin' Mama* [Alligator], has truly been a long time coming. "I've been putting this off for 30 years," laughs the 51-year-old multi-instrumentalist.

Though Ann is better known to the contemporary blues community as one third of Saffire — The Uppity Blues Women, she often gigs alone and actually relishes the freedom flying solo affords her. "There's more to Saffire than me," she admits, "but there's also more to me than Saffire. So I was able to stretch out quite a bit on this album. It's like the difference between playing baseball and basketball—you use the same muscles, but they're not the same game at all."

Characterized by a richly dynamic right hand and sprightly bass figures, Rabson's playing bears more than a little resemblance to one of her earliest idols. "'Blue Boogie' was certainly inspired by Jimmy Young," she grins. "But there's also some Mary Lou Williams, Huey 'Piano' Smith, and Big Maceo in there, too. I love it. Even after all these years, I keep going back to the well." —Gregory Isola

TURTLE TIME. Described as the "most famous musician you've never heard of," Andy Cahan, keyboard player for the Turtles (and who's also worked with Ringo Starr, Harry Nilsson, Eric Carmen, Jimmy Webb, Jimi Hendrix, Little Richard, Chuck Berry, the Monkeys, Seals & Croft, and many others), has two new projects in the works. He's putting together a book of his memoirs, and he's releasing a CD of his own material called *Snarfel*. Check out Andy's site at <http://home.earthlink.net/~snarfel/> and audio clips at <http://www.woa.net/andysound.html>.



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READER SERVICE NO. 9



Top: Ann Nesby unloads at the WMC Awards Banquet. Bottom: The print media panelists at WMC. Jim Tremayne, editor of DJ Times (standing), moderated. Writers from DMA, Urb, Spin, Mixmag, New York Times, and Keyboard participated – including yours truly (the goofy guy, third from right). —GR



WINTER MUSIC CONFERENCE

Last March, as the flag fell on spring break, dance music lovers from pole to pole converged on Miami Beach for the annual Winter Music Conference. Nothing “wintry” about it, though. The event (and the weather) was cookin’.

The WMC’s four-day run at the Fontainebleau Hilton Resort was a educational and entertaining affair. There were daily remix workshops, panels, demo derbies, DJ spin-offs, new artist showcases, and exhibits, plus nightly performances in local clubs such as Liquid, Groove Jet, Club Zen, and Zep Tepi. And, to put an exclamation point on it all, the WMC hosted their annual International Awards Banquet on closing night (see sidebar below).

The lineup of performers and panelists was stellar: Goldie, Rob Playford, Blame, Carl Cox, Daft Punk, Josh Wink, King Britt, Kristine W, Ann Nesby, Louie Vega, Le Click, Frankie Knuckles, Jesse Saunders, Jellybean Benitez, you get the picture. From record company execs to top-of-the-chart producers, the pool of talent was deep. Look for a slew of interviews from the conference in future *Keyboard* installments.

Now, here’s the good news: Anyone can attend this event. If you’re interested in learning more about remixing and producing, or about getting your music into the hands of industry movers and shakers, this is the place to be. If it relates to the dance music world, it’s likely being discussed at this event. Contact the WMC and request a registration form for next year’s conference (954-563-4444, fax 954-563-6889; email: wmconfab@aol.com, Web: www.wmcon.com). Also be sure to give *Billboard* a call (212-536-5002) about their summer Dance Music Summit in Chicago, slated to be held from July 16-18 at the downtown Marriott. —Greg Rule

AND THE WINNER IS . . .

As the clueless Grammy board continues to shun the dance music world, let’s give credit to the WMC, which hands out trophies each year to the world’s top dance music performers, producers, remixers, and labels. So, with no further ado, here are a few of this year’s nominees and winners. Congrats to all.

BEST NEW DANCE ARTIST SOLO

Amber
Robert Miles
Lina Santiago
Kristine W

BEST NEW DANCE ARTIST GROUP

La Bouche
No Mercy
Outta Control
Quad City DJs

BEST OVERALL DANCE ARTIST SOLO

Amber
Toni Braxton
Robert Miles
Kristine W

BEST OVERALL DANCE ARTIST GROUP

Chemical Brothers
Everything But The Girl
La Bouche
No Mercy

BEST REMIX SERVICE

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DMC
Ultimix
X-Mix

BEST REMIXER

Armand Van Helden
David Morales
Jr. Vasquez
Soul Solution

BEST PRODUCER

Babyface
Masters At Work
The Prodigy
Rollo & Sister Bliss
Todd Terry

BEST FREESTYLE 12"

Jocelyn Enriquez “Do You Miss Me”
K5 “Passion”
Lina Santiago “Feel So Good”
Lil’ Suzi “Just Can’t Get Over You”

BEST HINRG 12"

Amber “This is Your Night”
Gina G “Ooh Ahh, Just a Little Bit”
La Bouche “Sweet Dreams”
Robert Miles “Children”

BEST HOUSE 12"

Tori Amos “Professional Widow”
Toni Braxton “Unbreak My Heart”
Full Intention “America”
Funky Green Dogs “Fired Up”

BEST 12" DANCE RECORD

Tori Amos “Professional Widow”
Sandy B “Make the World Go Round”
Toni Braxton “Unbreak My Heart” (remix)
Robert Miles “Children”
Quad City DJs “C’m on Ride It”

BEST R&B 12"

Black Street “No Diggity”
Fugees “Killing Me Softly”
Keith Sweat “Twisted”
Toni Braxton “Unbreak My Heart”

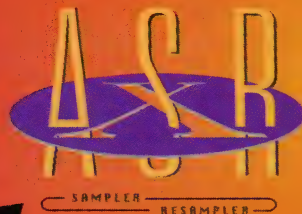
BEST RAP 12"

2Pac w/KC & JoJo “California Love”
Fugees “Ready or Not”
LL Cool J “Doin’ It”
NAS “If I Ruled the World”

with producer **George Gund**, is hard at work on *Modulations*. According to Lee, *Modulations* “is a portrait of the technological era of sound. Beginning with **Can** and **Kraftwerk**’s industrial folk music, progressing through Detroit techno and Chicago house, and ending with jungle’s beat collages and the hip-hop avant garde.” Lee plans to create “a dialogue between the manufacturers and designers of both synthesizers and samplers and the artists who work with them in order to better understand how these machines are used (or abused). Another goal is to explain the relationships between the work of the original dub producers, hip-hop pioneers and classical minimalists with contemporary electronic musicians with a focus on innovation. The movie will include in-studio footage with various artists discussing their creative process, live performances from around the world, commentary from academia, and an exploration of DJing as an interpretive process of musicmaking. The aim of *Modulations* is to provide a sense of history and context in which today’s electronic music can be understood; to entertain the converted and to validate techno (used here as a very loose term) to the nay-sayers.” Lee can be contacted via Caipirinha Productions at ilee@caipirinha.com or www.syntheticpleasures.com.

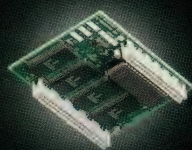
DEPARTURES. In addition to the loss of **Tina Turner** pianist **Kenny Moore** (see “On Tour” news, page 13), *Keyboard* was saddened to learn of the passing of singer/songwriter/pianist **Laura Nyro**, who was just 48. Both will be sorely missed. ■

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READER SERVICE NO. 10



In 1990 Kurt Harland told us to "think about it." In '93 he and his bandmates thought about it and went their separate ways. This year, Kurt and Information Society are back, and doing it his way.

"In 1988, Information Society was three people," says Harland, "Paul Robb, Jim Cassidy, and I. In '93, Paul and Jim reached a point where they no longer wanted to do the band, and I still did. [Ed. Note: Get the scoop on Robb in the May/June '97 issue of *Music & Computers* magazine.] When I was in the band with them, it was something that we did together — which means it wasn't exactly what I wanted to do or what they wanted to do. Now I'm doing what I want to do. It's unlikely we'll be in the Top 40 now, but you'll be able to buy the album and know that you're getting something more original."

After previewing a few of the new songs, I'm convinced that Kurt's description of today's Information Society is on target. "High drama, bombast with madness, beauty and power. It'll be

half very driving, intense music and half overly dramatic experimental."

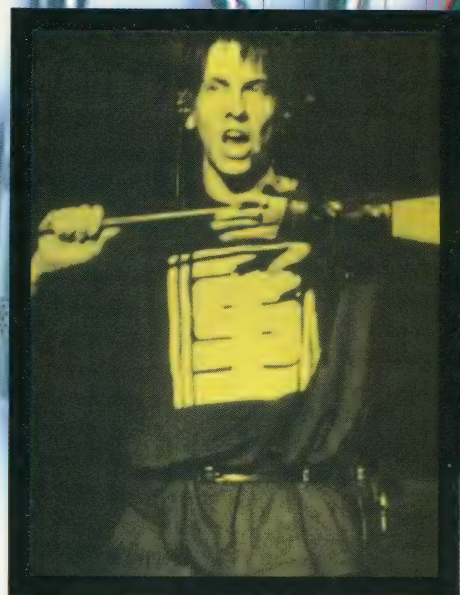
Machinery. A large part of the new sound comes from Kurt's sound-designing prowess; he beta-tests for Sonic Foundry. "A third to half of the work is designing the actual sounds," he explains. "You get the sound in the sampler, you pull it into your computer, you mess with it in Sound Forge, think about it, and you go through lists of sounds. It took me five months to build my database of sounds."

Speaking of samplers, Kurt uses "two Akai S1000s and one S1100. We also use a couple of drum machines and the [Kurzweil] K2000 Orchestral ROM sounds." A Mackie 32/8 and 1604 are the choices for mixing. Interestingly, the heart of his system is a homemade computer. "I'm a real modular type of computer user," says Kurt. "I buy the parts, and I build it for my needs. At the moment the motherboard is a P90, but I want to get a P200."

In addition to their heavy reliance on Sound Forge, Kurt and company use "this really old but beloved DOS-based, no-graphics sequencer called Sequencer Plus Gold by Voyetra. And here in the studio, [producer] Steve Siebold [of Hate Dept.] uses Cakewalk Pro Audio." Harland describes Siebold as "an unbelievable sound designer."

Recyclers. Information Society's first '97 release is a remake of the Gary Numan classic "Are Friends Electric" on Cleopatra Records. "It's probably my favorite song in the world," Kurt confides. When asked why he chose an indie to release this work, he said pointedly, "The major labels didn't want me, but I think they'll change their minds. Indies like Cleopatra understand what I'm trying to do, but they have limited power to fund me. I've been caught between a lack of interest from the people who can fund me and a lack of funds from the people who are interested in me. It doesn't matter, I'm just paying for it myself."

Road Warriors. Harland's main source of funding comes from his tours. "One of the advantages of having a substantial track record behind me," he explains, "is that I was able to go to Brazil and do a tour specifically to get the album budget. I'd rather

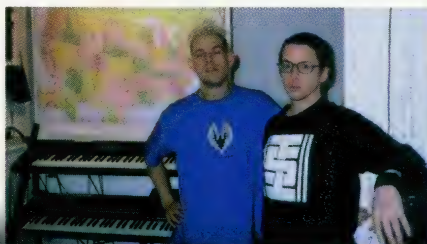


JEFF BECK

go to the record labels and say, 'Here, this is done. Do you want it?'"

Look for more live dates in the future. And not just any tour, it will be "the kind of show we've never done before," he promises. "I need to do the album and show the way I *always wanted to* make it — at least once." Kurt's vision of the new show is "all electronic, all live, no tapes, no sequencers. I'm hoping to have five people onstage, including me, with each person having their own setup using drum pads and keyboards. There will be lots of movement."

Video Star. Harland has irons in other fires, as well. "I like to go back and forth between working on the band and working on music for video games. I did a Sega Genesis game called *X-Men 2 — The Clone Wars*; then they had me do a CD version of the music for LaserLight to release. I also did music for a game called *Balls*, and a Sega Genesis cartridge called *Nightmare Circus*. When I'm finished with the album I'll be doing another [videogame] project. It's really necessary if you're in a band to have something else to give you balance and perspective." —Robert Semrow



(plug in)



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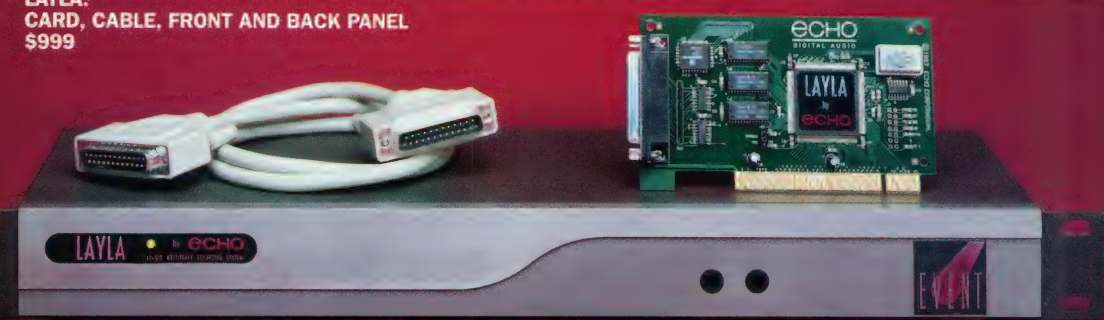
We founded Event on the principal that “the customer is precious.” That means we make only those products that our customers want, need, and can afford. Products that provide access to new levels of musical expression. Products that put high-end, professional tools in the hands of us mere mortals. (That's right. We use the gear we make, so we build the stuff that we want in our own setups.)

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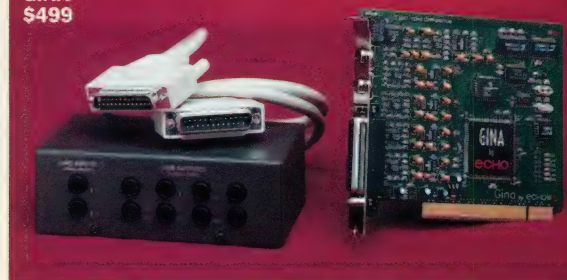
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If you only need two analog inputs and eight analog outputs (again, all 20-bit!), on-board DSP, and a breakout box loaded with RCA audio connectors, then say hello to **Darla by echo™**—priced to fit just about anyone's budget at only \$349. (No, that's not a misprint.)

All three systems are compatible with audio recording and editing software applications that "talk" to the Microsoft Windows 95 .WAV device driver—which means you

don't have to give up your favorite software in order to take advantage of the fantastic sound quality that Layla, Gina, and Darla offer. You can, for example (with full apologies to all of the fine software programs we're unintentionally leaving out), run Cakewalk Software's Cakewalk Pro Audio™. Or Steinberg's Cubase Audio™ and WaveLab™. Or Emagic's Logic Audio™. Or Innovative Quality Software's SAW Plus™. Or Sonic Foundry's Sound Forge™. Or Syntrillium Software's Cool Edit Pro™. (In fact, a custom version of Cool Edit Pro comes with each Layla, Gina, and Darla system, so you can be up and running even if you don't already own multitrack recording software.)

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And since getting up and running is half the battle (a battle we firmly believe you shouldn't have to fight) all three systems are true Plug-and-Play™ compliant. We even give you a utilities disk that examines your system before installation, so you know exactly what performance you'll be able to achieve.

Don't worry. We haven't forgotten our Mac-based friends. Our PowerPC-compatible systems (same hardware, new drivers) are coming this summer. Prepare to be stunned.

Precision Monitoring Systems

Building on the technological innovations that arose from the 20/20bas development, our intrepid engineers, Frank Kelly and Walter Dick, set out to create an active monitoring system that would be a perfect complement to the digital audio workstation environment. Requirements: small footprint, reference-quality frequency response, non-fatiguing to the ears over long periods of use, magnetically shielded, and *way* cool looks (!). The result: the **Tria™ Triamplified Workstation Monitoring System**.

This integrated three-piece system comprises a floor-mounted VLF (Very Low Frequency) driver housed in a station that is also home to five separate power amplifiers, active crossovers, and a full set of calibrated trim and level controls, plus

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Hot on the heels of the awesomely successful NT2 comes the **NT1**, a true large diaphragm condenser microphone. Like its predecessor, the NT1 boasts low-noise transformerless FET circuitry, and features the highest quality components. With a 1" gold-sputtered diaphragm inside a proprietary shock-mounting system, a unique head design that provides both durability and pop filtering (while remaining acoustically transparent), and a wide dynamic range that makes the mic ideal for use in a wide variety of applications, the NT1 is destined to become a fixture in the modern project and professional studio. And at only \$499, it's just plain scary.

waiting for.

two biamplified satellite speakers, each with a 5-1/4" polypropylene cone driver and 1" neodymium soft dome high frequency driver.

What's truly remarkable is that the biamplified satellite speakers reproduce frequencies down to an incredible 55Hz, so the listener experiences full-range sound when positioned in the direct field (that is, sitting in front of a computer screen). With the addition of the VLF station, the system response reaches down to 35Hz, resulting in full

bandwidth audio reproduction that is as accurate, precise, and pleasing to the ear as our award-winning 20/20bas system. You simply must hear **Tria** to believe it. Even then, you may not believe the price: \$849. (Yes, that's for the *entire* system.)

The 20/20p™ is a direct field monitor designed to provide an affordable pathway into the world of powered speakers. Utilizing the proven 20/20 design, the system comprises a 20/20 cabinet with two full-range 100 watt power amplifiers—one of the amps drives the powered cabinet, the other

drives a passive 20/20 satellite. The resulting sonic clarity is exactly what you'd expect from a system bearing the 20/20 name: extended low frequency response, exceptionally clear midrange, and sparkling high end. What does this kind of audio quality cost? A low, low \$599 per pair.

As with all of our active monitoring systems, the **Tria** and 20/20p offer continuously variable high and low frequency trim controls, input gain controls, balanced inputs with gold combination 1/4"/XLR connectors, and full magnetic shielding.



ESW-1 Speaker Switcher

But you were almost going to pass over this part. After all, a speaker switcher isn't exactly the most exciting product in the world. But the **ESW-1™ Speaker Switcher** delivers breakthrough performance and functionality, thanks to the clever engineering of Peter Madnick, who has long been a fixture in high-end audio equipment design. (He's actually pretty scary, possessing serious chops in both the analog and digital domains.)

What makes the ESW-1 unique among switchers is

its ability to simultaneously handle both active and passive monitoring systems. Of the six pairs of speakers that can be connected, up to three sets can be active. Switching among them is as easy as pressing a front-panel button. Or use the included remote control so you never have to leave the sweet spot when switching. Naturally, the audio path is beautifully transparent and the switching noiseless. There is one thing about the ESW-1 that we haven't quite figured out: If you own a pair of Event monitors, why would you have any other speakers that you needed to switch to?



EMP-1 Microphone Preamplifier

What better to complement a RØDE Classic, NT2, or NT1, than a custom microphone preamp that combines superior sonic performance with the features demanded by today's studio professionals? (Okay, we admit the thing sounds pretty amazing with other brands of mics as well.) First off, you should know that the **EMP-1™ Microphone Preamplifier** was designed

by engineering wizard Peter Madnick. Why is that important? Because, in Peter's own inimitable words, it means that the unit features a transformerless design utilizing a common-mode choke input [translation: RF interference is virtually eliminated], a superior differential input amplifier [translation: EM interference is suppressed], and servo control to maintain

zero DC offset [translation: There are no distortion-inducing capacitors]. Ahem. Thank you for those fascinating explanations, Peter.

Put in terms the rest of might have a chance relating to: The EMP-1 offers ultra low noise operation, selectable phase, low cut filtering, phantom power,

a line output (for running directly into Layla, perhaps?), and an internal power supply—all in a downright sexy little box. Now, what does all that mean? It means that the EMP-1 is a mic pre worthy of your finest microphones. (Don't let its low \$299 price tag fool you. This preamp is the real thing.)



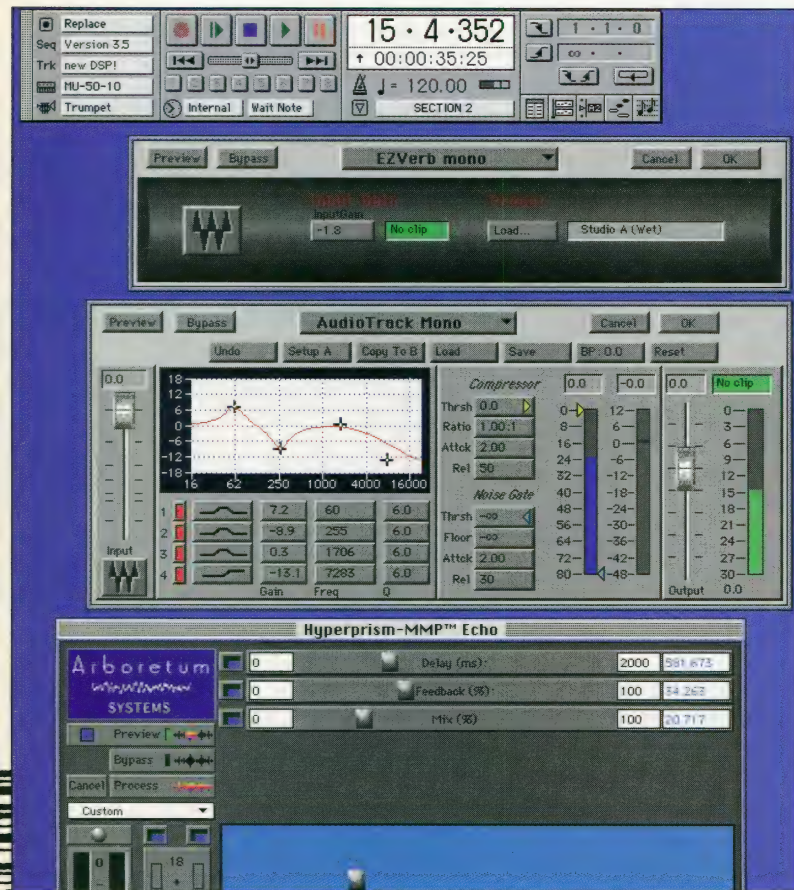
We're Event Electronics. Thanks for taking the time to see what we're about. We hope you like what we're doing; please let us know. We'd love to hear from you.

For more detailed information on any of our products—and for amusing photos of prominent members of our industry caught in embarrassing situations—visit our Web site, www.event1.com. Or e-mail us directly at info@event1.com. Literature on specific products may be obtained by calling 805-566-7777, ext. 555.

Specifications and features are subject to change.

Tools of the Trade

BY MARK VAIL



THE NEXT VISION

Opcode Systems has released a major upgrade to Vision for Macintosh, including a special Vision 3.5 Deluxe CD Edition, available for a limited time. **Vision 3.5** (\$395, \$89.95 upgrade) now has PowerMac native code, enhanced support for Apple's Sound Manager, and several new DSP features. On the multimedia front, the new version supports Adobe Premiere plug-ins, offers advanced QuickTime features, and can read and write all major audio file types including .WAV, au, AIFF, and Sound Designer II. Vision can directly read and write QuickTime audio and MIDI files, and Version 3.5 sports an integrated QuickTime movie window. SmartSync, working with Sound Manager, allows users to double the number of audio tracks with much tighter synchronization — up to 20 tracks on the fastest Power Macs. New DSP functions include normalize, sample-rate convert, invert phase, EQ, fade-in/out, and reverse.

The **Vision 3.5 Deluxe CD Edition** (\$495, \$179.95 upgrade) comes with Waves 21-preset EZVerb plug-in, Arboretum

Hyperprism lowpass EQ and echo plug-ins, Beatboy SMFs recorded by Nigel Olsson, Eddie Bayers, and Rod Morgenstein, Proto techno, jungle, ambient, and house SMFs and audio loops, Cyburban OMS accessories, Galaxy Universal Patch Librarian v.2.1, and more.

Studio Vision Pro 3.5 (\$995 for the Deluxe CD Edition, \$179.95 upgrade) supports Digidesign's Pro Tools III PCI cards, including complete support for TDM bussing and SampleCell TDM. Formant pitch-shifting reportedly allows the vocal character of a recording to remain intact while the pitch is changed up or down a fifth. *Circle Reader Service Card No. 156*

SOUND BYTES

Time+Space: *Fields of Motion* (\$99.95 audio CD, \$199.95 Akai S1000 CD-ROM) uses raw and organic sources sampled at theme parks, factories, and industrial sites for the creation of rhythms and soundscapes. Loops are accompanied by individual sound components, hits, and ambiences.

Four new audio CDs fall within the "Old School Flavors" series, featuring over 1,000 bars of grooves per disc of retro drum loops and samples. Each of nine vintage drum kits

EVERYONE IN THE SOUNDPOOL

SoundPool has released two new products for the digital recording musician. The **Digital Audio PCI Mastering Card** (price TBA) is a 24-bit S/PDIF interface for PC and Mac computers. It features both coaxial and optical S/PDIF I/O. Currently, a Windows 95 driver is available and supports Steinberg's WaveLab sample-editor software; a Mac driver is under development.

For digital signal routing, SoundPool offers the **Digi Switchboard** (498DM; U.S. price TBA). This 1U rackmount S/PDIF device provides four inputs that can be independently routed to two outputs. A fifth input accepts signals from the company's SRC sample-rate converter. Both optical and coaxial I/O is supported. The Switchboard will also conduct optical ADAT signals. *Circle Reader Service Card No. 157*



Midiman Keystation Pro

was used to play five song patterns, each at two different tempos. Each song performance is divided into three 4-bar segments: the main groove (chorus), a simpler version (verse), and the full-on syncopated breakdown; each section ends with its own fill. *Rare Groovin'* (\$99.95) features grooves of the late '60s and early '70s. *Super Funk* (\$99.95) provides the classic funk sound of the '70s. *Vintage Soul* (\$99.95) serves up the soul sound of the '60s and '70s. *House Party* (\$99.95) dishes out the disco and dance soul sounds of the mid-'70s through the early '80s.

Vocal XTC (\$99.95) is an audio CD containing male and female vocals in the styles of dance, R&B, soul, and rock.

If jungle is your thang, *That Jungle Flavour, Vol. 2* (\$99.95) may cater to your taste. It features a wide selection of rough-and-ready breaks, pads, stabs, and effects to step up the dancefloor pressure.

Black II Black Killer Vocals, Vols. 1, 2, & 3 (\$99.95 each) are audio CDs featuring male and female vocal hooks, percussion and background vocals, vocal fills, ooh and ah multisamples, slow and soulful and ragga vocals, and more. *Circle Reader Service Card No. 158*

Patchman Music: *Studio/New Age Impressions, Vol. 2* (\$24.95) for the Yamaha DX7II is a floppy formatted for Opcode, Mac self-loader, DX7IIFD, or Mac/PC SMF containing 64 voices and 32 performances of lush keyboard layers, breathy timbres, harps, analog synth emulations, dreamy ethereal pads, and tuned drums. *Analog Essentials, Vol. 1* (\$29.95) for the Studio Electronics SE-1 features 99 classic synth basses, leads, chorded leads, and specialty patches on a floppy for Opcode Galaxy, Mac self-loader, or Mac/PC SMF. Each of the five new sample/voice disks for the Yamaha SY99 contains half a meg of samples and a minimum of 16 voices for \$24.95 per disk; titles are *Minimoog Bases*, *Linn Drum*, *Rap/Hip Hop Drums*, *Grand Piano*, and *Matrix-1000*. For Yamaha's VL70m, Patchman offers a disk of 60 new voices designed to be used with a wind or breath controller, covering flute, trumpet, trombone, orchestral brass, sax, harmonica, violin, acoustic and electric guitar, bass, analog synth, and more (\$39.95, Yamaha Visual Editor file format or SMF for Mac or PC). Add \$2 per disk for shipping/handling, \$10 for foreign orders. *Circle Reader Service Card No. 159*

Back In Time Records: *Hilldale* (\$199.95) is a general-purpose CD-ROM for the Akai S1000 that contains 700 samples of grand pianos, synths, basses, percussion, pads, leads, drums, and sound effects. *Circle Reader Service Card No. 160*

FIND THE DROPOUTS

The DMS-1 Dropout Monitor System from G&W Produkte interfaces with Panasonic's SV-3700, -3800, and -4100 and Technics SV-DA10 DAT recorders to print out reports of errors and data loss using a standard RS-232 9-pin printer. Among other chores, it monitors error rates on any DAT, recalls error locations, and provides one-touch recording on Marantz CDR-1 and -610 CD recorders. Installation must currently be handled by G&W in Germany for \$650; the company also sells new DAT machines with DMS-1 installed, as well as dot-matrix and thermal printers (\$200 and \$300, respectively). *Circle Reader Service Card No. 162*



TECHNOLOGY WITH POWER

Power Technology has released the **Win-FX** software interface package (free to registered owners), a set of software drivers that allows the DSP-FX realtime effects processing system to be accessed from popular PC digital audio workstation programs including Cake-walk Pro Audio, SAW Plus, Sound Forge, Samplitude, Wavelab, and Emagic Logic Audio. Two new plug-ins have also been introduced: Auto Panner, which animates a sound source as it moves through the stereo field, and Tremolo FX. These plug-ins are available at no charge to current DSP-FX owners. *Circle Reader Service Card No. 163*

MORE FROM MIDI, MAN

Midiman's new **Portman 4x4/S** (\$279.95) is a 4-in, 4-out parallel-port PC MIDI interface with SMPTE sync, 64 independent MIDI channels that reportedly all transmit and receive at full MIDI bandwidth, and full Windows MME compatibility. It works with Windows 3.1, 3.11, and Windows 95. When disconnected from the PC, it acts as a stand-alone MIDI patchbay.

The **Keystation Pro** (\$199.95) features a 4-octave velocity-sensitive keyboard with full-sized keys and selectable velocity curves, assignable pitchbend and

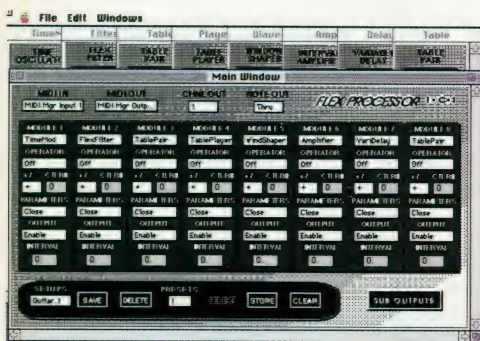


Norton Music: *User Style Disk #6* (\$29) for Band-In-A-Box provides 30 new styles for rock, pop, country, and crossover. Also now available are two fakebook disks for Band-In-A-Box. *Fake Disk #4* (\$32.95, \$59.95 with book) contains over 250 rock songs, and *Fake Disk #5* (\$39.95, \$69.95 with book) includes over 675 jazz tunes. These fakebooks are available for the IBM-PC, Mac, and Atari versions of Band-In-A-Box. *Circle Reader Service Card No. 161*

mod wheels, octave-transpose buttons, program- and bank-select buttons, 10-key numeric keypad, a General MIDI mode switch, and a sustain pedal input. A 9-volt DC power supply comes with the keyboard, which can also be battery-powered.

Also new from Midiman is the **DMan Digital Audio Card** (\$249.95), a full-duplex PC digital audio card that's also available as the **DMan Digital Studio** (\$299), a package that includes Samplitude's Multimedia Version hard disk recording software.

Midiman's **DigiPatch 12x6** (\$699.95) is a 12-in, 6-out digital audio patchbay that includes both optical and RCA-type connectors for switching S/PDIF and ADAT optical signals. *Circle Reader Service Card No. 164*

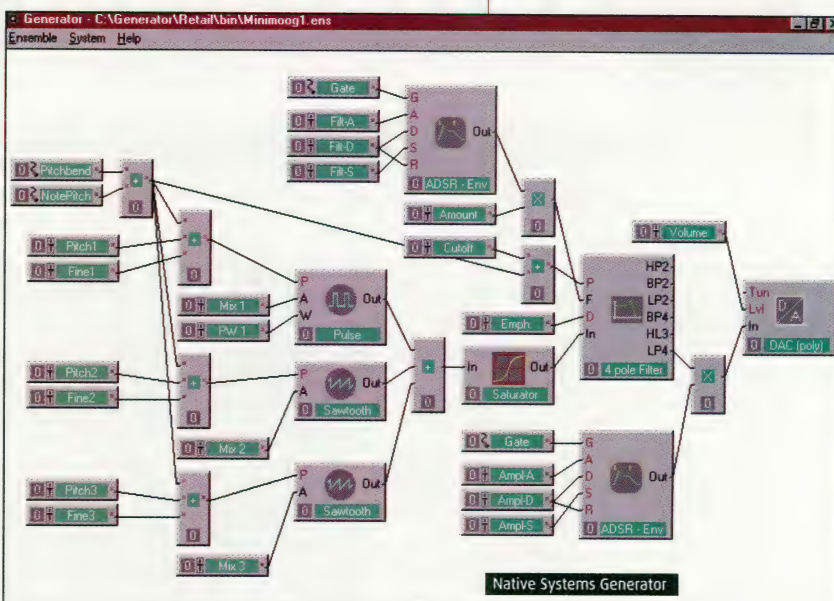


MUSCLING UP ON MIDI

New from Cesium Sound is the **Flex Processor Interactive Control Interface** (\$160), a Mac program that simulates physical interaction with an acoustic instrument via software. It employs algorithmic methods to modify pitchbend and other continuous controller data, making it possible to play musical gestures or "licks" using the joysticks, mod wheels, and other controllers on standard MIDI synths. More information and a downloadable demo of Flex Processor I.C.I. are available on the CompuServe MIDI forum or on the Internet at www.harmony-central.com/midi. *Circle Reader Service Card No. 165*

THEY'RE GETTING RESTLESS

Native Instruments has released the **Generator Realtime Software Synthesizer** (\$700), a software-based sound synthesis toolkit with FM and analog simulations for 32-bit Windows platforms. Audio signals are generated and processed in real time by the PC's CPU. Digital-to-analog conversion takes place within an ISA-bus card, which comes as part of Generator. Based on a modular concept, Generator offers new possibilities to musicians, composers, and sound designers, yet the program is reportedly compact and easy to understand. System



requirements include Windows 95 or Windows NT, a minimum hardware platform consisting of an Intel i486 DX4-100 or a Pentium with at least 75MHz clock and at least 256kB of pipeline burst cache. Generator's proprietary D/A-converter card requires a 16-bit ISA slot. *Circle Reader Service Card No. 166*

WHERE'S DELILAH?

Whether it's a digital effects processor, mixer, or EQ you need, Samson Technologies are ready with some new goods. The **Zoom Studio 1204** (\$249) sports rotary speaker, vocoder, vocal distortion, and other effects within a 1U rackmount package that includes 512 factory and 100 user programs, MIDI control of effect parameters, 18-bit, 44.1kHz sampling, 2-digit LED display, and a 1/4" front-panel mic input.

Within the recording/live mixing realm, the **Behringer Eurodesk MX 3282** 8-bus mixer (\$1,799) serves up 24 mic/line input channels and four stereo channels, eight assignable/pannable subgroups with individual balanced outputs and discrete balanced mic inputs, switchable +48V phantom power, eight balanced aux sends (six switchable to pre-fader), and four balanced stereo effects returns.

Even more serious is the **Behringer Eurodesk MX 8000** (\$2,499) 8-bus console, packing 24 dual-input channels, each with dedicated EQ, mute, pan, and level controls. Also included are eight balanced subgroups, channel, subgroup, and mix insert points and direct outputs, 24 balanced tape inputs and outputs, switchable +4dBu/-10dBv operation, 4-band global EQ with sweepable midrange, six stereo effects returns, solo-in-place and pre-fader listen monitoring, 24-channel meter bridge, 2-channel meter bridge, and two independent headphone mixes. Optional are a 24-channel meter bridge and a Cybermix 32-channel mute/fader automation system. *Circle Reader Service Card No. 167*

EXPRESS THIS

The **Expressionist** (\$599) from Encore Electronics is an 8-channel MIDI-to-control-voltage converter designed for connection to a variety of pre-MIDI equipment. Each CV channel can be assigned to a specific MIDI channel, and multiple CVs can be grouped polyphonically. A programmable portamento function works at either constant rate or constant time. Each of the eight programmable gates offers single or multiple triggering. The Expressionist supports both exponential and linear oscillator control, and provides eight CV outputs with a range of -3 to +10 volts, eight corresponding programmable gates or S-triggers, a 16-bit DAC, pitchbend on each channel, six octaves of transpose per channel, three global LFOs, each with separate MIDI channel, modulation, and waveform (sine, triangle, square, up and down saw, and sample & hold), 100 user programs, two-row LCD with contrast control, Flash memory upgradable via the MIDI in, and much more — all in a 1U rackmount box. *Circle Reader Service Card No. 168*

The Lauriston Report

MAC OS 8.0 FINALLY COMING — SORT OF

Remember System 8 (a.k.a. Copland), Apple's long-delayed successor to System 7? Well, Apple will finally ship Mac OS 8 this July, but don't be confused — despite a new look and a multitasking Finder, under the hood it's still System 7. (In fact, the release was originally expected to be numbered 7.7.) Most of the goodies promised for System 8, like preemptive multitasking and memory protection, aren't due until Rhapsody, still promised for next year.

FASTER, SMALLER POWERBOOKS

Apple's got a couple of new options coming for those of you who can't go on tour without your Macs. If you need more power, the 3400c's CPU is getting bumped up to 300MHz. If you've got too much luggage already, the company's rumored subnotebook 2400 will be the smallest PowerBook ever, checking in at a mere four pounds. (It'll probably be similar to IBM's four-pound. ThinkPads, since Big Blue helped with the design.)

APPLE LAYOFFS ENCOURAGE BUYOUT RUMORS

Seeking desperately to stem mounting losses, Apple announced in early April that it would lay off 30% of its workforce. A third of the 4,100 departing employees were temps. The move was expected to cost the company around \$100 million, pushing its losses for the quarter ending March 29 to something over half a billion dollars.

That doesn't mean the Mac's going to disappear, but the company is ripe for a buyout. At press time, the latest news was that a Saudi prince had acquired 5% of the company, and was joining Oracle CEO Larry Ellison in a takeover bid. (Actually, that's probably just a lot of hot air, but I couldn't pass up the chance to drop a name like al-Waleed bin Talal bin Abdulaziz al-Saud.)

Behringer Eurodesk MX 8000



AMD Beats Intel — Briefly

At least for one brief shining moment, AMD was selling the fastest Pentium-compatible CPUs in the world. The chip company's 233MHz K6-MMX, which shipped in March, outperformed Intel's top-of-the-line 200MHz Pentium Pro by a modest margin when running most applications. (For details, check out the PC Week Labs test results at <http://www.pcweek.com/reviews/0331/03k6.html>.)

By the time you read this, though, Intel may be back on top. The company was expected to ship its new 233MHz Pentium II CPU in May, and preliminary results show it's faster than the K6. AMD's lower prices will likely mean it'll still offer more bang for the buck, though.

YOU CALL THAT FAST?

While PC and Mac CPUs are still hovering in the 200-300MHz range, Digital's Alpha family just broke the 600MHz barrier. It also pushed the cost of its "entry-level" 400MHz chip below \$300, which means we may start seeing Alpha-based Windows NT systems in the Pentium/PowerMac price range. That's not very significant for musicians today, but if the extra horsepower draws digital-audio developers, the platform could become a practical alternative.

WINDOWS 97 DELAYED?

Rumor has it that Windows 97 has been pushed back to, well, let's just say it may be renamed Windows 98. Microsoft reportedly has told PC vendors that it won't be ready in time to bundle on systems to be sold this Christmas, thus the ship date is expected to be delayed until after the year-end rush to avoid angering hardware manufacturers (MS's biggest customers), whose sales are often hurt when the models in stock aren't preloaded with the latest software. — Robert Lauriston

CONTACTS

Back In Time Records: Syntec GmbH, Pfungstädter Strasse 70, D-64297 Darmstadt, Germany. +49-5141-596002; fax +49-6151-596008. U.S. distribution: Big Fish Audio, 11003 Penrose St., Ste. C, Sun Valley, CA 91352. 800-717-3474 or 818-768-6115; fax 818-768-4117.

Behringer: see Samson Technologies.

Cesium Sound: 2034A Blake St., Berkeley, CA 94704. 510-548-6193; fax 510-704-0748. Web: www.harmony-central.com/midi.

Encore Electronics: 611 Laird Lane, Lafayette, CA 94549. Phone/fax: 510-229-8875. Email: encore@value.net. Web: <http://pwp.value.net/encore>.

G&W Produkte: Wiener Straße 22, 10999 Berlin, Germany. Phone/fax: +49-30-6126104.

Midiman: 45 East St. Joseph St., Arcadia, CA 91006. 818-445-2842; fax 818-445-7564. Email: info@midiman.net.

Native Instruments: Willibald-Alexis-Str. 5, 10965 Berlin, Germany. Phone/fax: +49-30-6914966. Email: 100542.1524@compuserve.com.

Norton Music: P.O. Box 13149, Fort Pierce, FL 34979-3149. 561-464-4609; fax 561-467-2420. Web: <http://members.aol.com/NortonMIDI/index.htm>.

Opcode Systems: 3950 Fabian Way, Ste. 100, Palo Alto, CA 94303. 415-856-3333; fax 415-856-3332. Web: www.opcode.com.

Patchman Music: 1600 St. Charles Ave., Lakewood, OH 44107. 216-221-8282. Email: MatteBlack@aol.com. Web: <http://members.aol.com/Patchman1/>.

Power Technology: 100 Northhill Dr., Bldg. #24, Brisbane, CA

94005. 415-467-7886; fax 415-467-7386. Email: dspfx@dspfx.com. Web: <http://www.dspfx.com>.

Samson Technologies Corp.: P.O. Box 9031, Syosset, NY 11791-9031. 516-364-2244; fax 516-364-3888.

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Time+Space: P.O. Box 306, Berkhamsted, Herts, HP4 3EP, England. +44-1-442-870681; fax +44-1-442-877266. Email: sales@timespace.com. Web: <http://www.timespace.com>.

Zoom: see Samson Technologies.

Electronica



ELECTRONICA features electro industrial loops and samples, many with a construction kit format and MIDIFILES. The MIDIFILE loops contain all the loop elements to enable you to recreate the loop with your sequencer, change tempo without affecting pitch, change samples, you can fully customize each loop. 100's of loops and MIDIFiles.

CD AUDIO & MIDIFILES \$99.95

Hypnotica



Another NEW RELEASE from the creators of ten star reviewed Technophobia! and Tekno/Industrial, Greg Hawkes and Perry Geyer HYPNOTICA is loaded with cutting edge aural textures, trance and ambient loops, FX, Mind blowing Sweeps, Galactic Noises, Hypnotic sequences. Magical noises for your next RAVE. Highly recommended (East-West)

CD AUDIO \$99.95

Deep House Party



NEW from the L.A. RIOT team - the ultimate HOUSE 2-CD SET. You get over 50 produced Chart Busting House Tracks in Construction Kit format in BPM and Key groups for easy combining of kits. DEEP HOUSE PARTY includes over 300 loops, 1000's of possible combinations! PLUS unique house vocals from the incredible Dianne Gordan.

2 CD AUDIO \$99.95

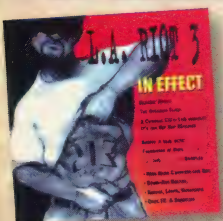
Smoov Grooves



SMOOV GROOVES is the long awaited sequel to the critically acclaimed "Funky Ass Loops" from Prince's rhythm section Sonny T. & Michael B and is the finest collection of laidback smooov grooves & 70's funk. The tempos range from 60-108 BPM. First you get a full mix of each loop, followed by the drums, bass, guitar, percussion etc. SUPERB!

CD AUDIO \$99.95 / CD-ROM \$149.95

L.A. Riot 3



L.A. Riot 3 is a collection of construction kits in hip-hop, funk and new jack swing styles, presented on 2 CDs. SOS (UK) said in review "Conclusion: LA Riot 3 is a hard act to follow - the sheer amount of usable and inspired sounds create an all-American urban sound scape of immense realism. LA Riot 3 is quite simply a classic". KEYBOARD agreed.

2 CD AUDIO \$99.95 / 2 CD ROM \$149.95

DM Hip Hop / Electro



From BEST SERVICE each title in the DANCE MEGA series includes an Audio CD AND AKAI/EMU CD-ROM for only \$99.95! HIP-HOP/ELECTRO includes 1100 new drum loops (80-120 bpm) PLUS 500 current Hip-Hop sounds including funky guitar licks, synths, chords, basses, multisamples, drums. Two products for the price of one! UNBEATABLE VALUE!!

CD AUDIO & CD-ROM \$99.95

DM House / Dance



From BEST SERVICE each title in the DANCE MEGA series includes an Audio CD AND AKAI/EMU CD-ROM for only \$99.95! HOUSE/DANCE includes 1300 new drum loops (120-140 bpm) PLUS 350 House and Dance sounds including house-synths, house-organs, pads, claps, basses, multisamples, and drums. Two products for the price of one!

CD AUDIO & CD-ROM \$99.95

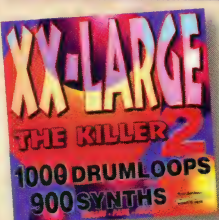
DM Jungle / Rave



From BEST SERVICE each title in the DANCE MEGA series includes an Audio CD AND AKAI/EMU CD-ROM for only \$99.95! JUNGLE/RAVE includes 1200 stereo drum loops (140-180 bpm) PLUS 250 Jungle/Rave sounds including rave synths, basses, pads, drums and multisamples. Two products for the price of one! UNBEATABLE VALUE!!

CD AUDIO & CD-ROM \$99.95

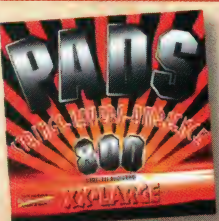
XXL The Killer 2



The sequel to the triple TEN STAR Keyboard reviewed CD XX-Large "The Killer" - XX LARGE "KILLER 2" includes over 1000 accurately tuned new drum loops from 120 to 165 bpm plus many more hot killer samples. PLUS! you get over 900 Synths all on one CD. Another GIGANTIC collection from Germany's BEST SERVICE and the XX-Large team.

CD AUDIO \$99.95 / CD-ROM \$149.95

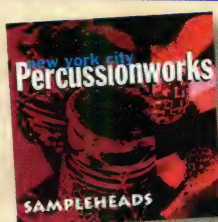
XX-Large Pads



From BEST SERVICE and the XX-LARGE team, STRING MACHINES is a another monster 2-CD collection (for the price of one!!) of over 800 unique layered pads in stereo, single chord - pads, phasing and chorused analog pads, trance and surrealistic ambient pads, orchestral strings, ambient atmospheres and much more. GREAT VALUE

2 CD AUDIO \$99.95 / CD-ROM \$149.95

NYC Percussionworks



A great amount of time and experience went into making Percussionworks the musician/producer's percussion WORKHORSE - PW is 2 CDs of outstanding percussion from 7 of New York City's best. This is all that's needed to add hot rhythm to your track. 100's of percussion samples and loops all digitally recorded. Works with Drumworks.

2 CD AUDIO \$99.95 / 2 CD-ROM \$249.95

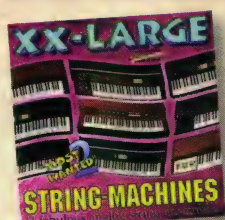
Whole Lotta Country



Sampleheads spent a year developing this 2-CD collection of Country Instruments from Larry Campbell. Everything you could possibly need to create country music is included: Fiddle, Mandolin, Pedal Steel, Guitar, Banjo, Dobro, High String Guitar, Acoustic Guitar, Electric Telecaster, 6 String Guitars, Harmonica, Gut Bucket.

2 CD AUDIO \$99.95

String Machines



From Germany's BEST SERVICE and the XX-LARGE team STRING MACHINES is a monster 2-CD collection (for the price of one!!) of the warmest analog string and synth sounds that you've ever heard. AVAILABLE NOW on a 2-CD Audio Set or CD-ROM for Akai (and compatible samplers), Roland and SampleCell

2 CD AUDIO \$99.95 / CD-ROM \$149.95

Methods Of Mayhem



This is a brutal and sweet Sampling Product for Industrial Music, Hardcore & Intelligent Techno, Goth Techno and similar dark and moody outings. It's time to get ugly. These are not your every day samples but uniquely twisted and bizarre. This best selling collection recently received a quadruple ten star review in KEYBOARD.

CD AUDIO \$99.95

Akai Soundcube



This huge sound archive on ten CD-ROMS is a must for every AKAI user who wants a complete sound collection at a super low price. Synths, rave and dance sounds, sequences, choirs, drums, FX, orchestra, ethnic, vocals and much more - all ready mapped and looped plus multisamples, in a box. (AIFF/WAV version \$149)

10 CD ROM BOX SET \$199.95



NOW SHIPPING the Sampling Sound System CD-ROMs from SOUNDS GOOD are available in Multi Format CD-ROMs for Samplers and Computers. Each CD-ROM contains 2-300 Loops & Samples in AUDIO/AIFF/WAV formats for only \$29.95! The series is also available as AKAI CD-ROMs for only \$59.95! PLUS! as a special FREE BONUS the Multi Format CD-ROMS (excl. Roots Reggae) include STEINBERG'S CUBASIS AUDIO LIGHT SEQUENCER and HARD DISK RECORDER. The Sampling Sound Series uses tempos in even 10's and a set number of keys to provide one huge library of interchangeable loops and riffs. The SSS series contains professional sounds from one of the world's most acclaimed sound developers. The price is not a mistake - the series is designed to enable you to mix and match the sounds and loops and the price per sample works out close to regular Sample CDs.

**MULTI FORMAT \$29.95
AKAI CD ROMS \$59.95**



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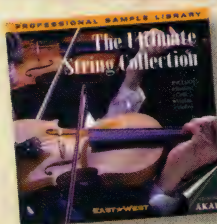
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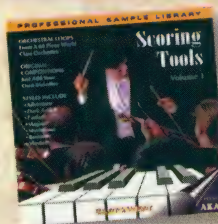
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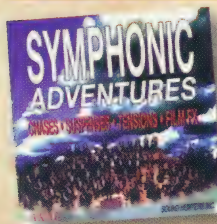
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INTERNET MUSIC ACTION.....

Unless you've spent the past two years breaking the world record for flagpole-sitting or laboring over a new translation of Aristotle's *Poetics*, you may have noticed the absolute frenzy of activity, excitement, and miscellaneous blather swirling around the World Wide Web. The Web is everywhere — not just geographically but in the mainstream media. All together now: *www-dot...*

For the average Joe or Jane, the Web may be no more than a novel and convenient alternative to a trip to the library, or a way to satisfy that nagging curiosity about what's going on in the far-flung corners of the civilized world (or, more likely, the far-flung corners of your neighbors' minds). But for anybody who has a product to sell, the Web is first and foremost a promotional tool. Everybody from Disney, Inc., to your favorite corner restaurant is establishing a Web presence. And we're rapidly moving into an era when "presence" and "promotion" are only half the picture: Direct online sales of merchandise are going to be a booming business in the very near future.

If you're active as a pro or semi-pro musician, you may

already have a Web site, or you may still be girding your loins to take the plunge. Either way, you're bound to have questions about how music is being delivered on the Web. What are your options for letting fans hear excerpts from your latest CD? Is it practical to sell CDs — or even downloadable soundfiles — directly? How much will it cost, and how big will the headaches be? What resources are available that you might want to check out? And what developments are on the horizon that will make maintaining your site easier (or merely up the ante, forcing you to run even faster just to stay in the same place)?

This month we set out to answer as many of those questions as possible, given the rapidly mutating nature of the subject. In our main feature ("Internet Audio for All," page 32), an expert surveys the current and emerging technologies with which audio is delivered over the Web. Check out data compression, realtime streaming, and much more, with an emphasis on what's practical and how you can get up and running. We also consult-





ed a lawyer for advice on the copyright and licensing issues that arise when music is transmitted electronically; see "Copyright and Licensing for Internet Music" on page 59.

Trying to listen to the audio that other musicians have already uploaded to their sites can be incredibly frustrating. You've got to have the right browser plug-in, and it has to be configured properly. In "Ten Tested Tips for Painless Music Browsing" (page 43), we demystify the receiving side of the online music equation. Whether you're a fan searching for CD previews, or just checking out the competition, we've got instructions for how to turn your computer into an Internet music monster. And to tie it all together, check out our annotated list of "67 Cool Sites" (page 51) where you can experience cutting-edge music delivery in action, or learn more about the tools. There's no need to do a lick of typing: The latter article is available on our own Web site (*Keyboard Central*,

www.keyboardmag.com) as active links. Bookmark it.

If you have questions on how to start and maintain a Web site, you're bound to find plenty of good how-to books on HTML programming and related topics at a nearby bookstore. There's no need for *Keyboard* to duplicate that material. Nor did we delve into the MIDI side of the coin. There's plenty of activity there as well; for a quick taste, see "MIDI Meets the Internet" on page 36.

For independent recording artists, the Web can be an unbeatable resource. It enables you to bypass radio entirely and establish a worldwide fan base even in a very specialized genre. The downside is that maintaining your Web site is yet one more entrepreneurial activity that takes time away from actually making music. Do you *need* a Web presence? That's not a question we'll try to answer, not this month. Whether you're a skeptic or a convert, though, the Web is too big to ignore. So turn the page and start getting connected. —Jim Aikin

INTERNET AUDIO FOR ALL WANT TO PUT YOUR MUSIC ONLINE?

AN EXPERT SURVEYS THE LEADING OPTIONS

BY CHRIS MANNERS

The World Wide Web has been called the ultimate distribution channel for audio: It has the potential to level the playing field between garage band and the major labels. Certainly, the technology that's available for the average user isn't that complicated, and the high-end solutions for distributing and selling audio over the Web aren't quite here yet: Everyone's in the same boat, and this means the tools you can use at home are roughly the same as the tools anyone uses to put audio online.

Among the Web's chief virtues, it's been claimed, is its low cost of entry — an individual can just as easily post a new release as an industry player. But the reality is that there are a few barriers: You'll need a combination of time, money, and technical knowledge to deliver audio over the Web. It's certainly worth stressing up front that if you want to not only let people hear your music but collect money from them for the privilege, even more labor and know-how will be needed. While advances are being made in this area, at the moment individual musicians are better off considering audio over the Web as something that's free — a promotional tool.

There are two methods for delivering audio over the Web: files that have to be downloaded before playback, and audio that plays during download (a.k.a. "streaming audio"). If you choose the first scenario, your track will be accessible to a wider audience and you'll have greater control over the sound quality. The downside is that getting that good-sounding audio file onto surfers' hard drives may vex their patience. On the other hand, if you're considering streaming audio you have the huge advantage of almost instantaneous sound — but at the expense of quality.

To provide realtime audio over the Web requires a lot of data compression. We'll have more to say about this below. Also, streaming audio is so new that the tools required for playback aren't as ubiquitously distributed as, say, a player for an AIFF or .WAV file.

As you contemplate these devil's choices, there's another issue: How comfortable are you with the Web itself, and with audio processing

software? Are you planning to create your own Web presence from the ground up, or would you rather hand off some of the labor to a commercial online service? Fortunately, there are options for all budgets, and ways to get your content online with as much or as little effort as you want to shoulder.

The Content Aggregators

The simplest way to get your music onto the Internet is to let someone else take care of it for you. Several services act as audio content "aggregators." Probably the best known is the Internet Underground Music Archive (www.iuma.com). IUMA hosts audio files and Web pages for both independent and signed acts. Other less prominent services are cropping up all the time: You might want to check out RockWeb (www.rockweb.com) and Music Universe's garage (www.musicuniverse.com). There may be one of these content services in your local area, perhaps affiliated with a local music weekly (See Figure 1), but since the Web is inherently non-local, there's no penalty for choosing whichever service most closely meets your needs.

Typically, these services charge a yearly basic rate, for which they create a Web page that includes some images, artist information, and digitization of one or two songs that those who visit your site can download. Pricing ranges from \$99 to \$300 per year. IUMA cross-categorizes artists by genre, so surfers can find you and your audio by selecting either "electronic" or "dance," for example.

Your role is to provide a DAT tape or CD with the music you want online, together with biographical materials. Additional services, such as more songs, the digitization of a video clip, and statistical reports on how often your site is being visited, can quickly raise the cost. And this highlights the problem with these services: You have a limited presence at a premium cost. The benefit is that you have a greater chance of someone stumbling across your songs. People who are looking for audio will be more likely to go to IUMA, for example, than to your own site.

IUMA currently delivers audio files in two formats: compressed as MPEG2 Layer 3 audio files and in Progressive Network's proprietary

RealAudio format. The MPEG files are highly compressed audio that first must be downloaded to the receiver's hard drive. Typically, they can achieve compression ratios as high as 12:1 while still retaining most of the subtleties of your music. The other method by which IUMA delivers audio files is via RealAudio, the first widespread streaming audio technology, and one commonly adopted by other audio providers. To listen to RealAudio, you'll need to have a browser that supports plug-ins — Netscape 2.x or Internet Explorer 3.x.

IUMA has recently moved towards a third method of providing streaming audio. They've announced an alliance with Liquid Audio, a company that is forging ahead with solutions to some of the problems that have been vexing music companies in their quest for online distribution: copyright protection and sales. Like RealAudio and Shockwave, the Liquid Audio format is proprietary. This means that files delivered using these tools can only be decoded and played back using the a specific plug-in. As we'll see, all the streaming options require special handling.

Roll (and Compress) Your Own

We've all been bombarded with ads telling us that Web access with email is available for around \$20 per month. What's not readily apparent is that many Internet providers will also give you about 5Mb of hard disk space and a folder for your Web site to live inside. Given the size of audio files, especially uncompressed ones, this can become a limiting factor, but for a small additional fee (\$10 more per month in my case), you can generally increase your amount of storage space to around 25Mb.

There are freeware and shareware HTML editors, audio processors, and FTP programs (to upload files to your Web site) available from repositories such as shareware.com and jumbo.com, as well as a slew of low-level consumer tools that cost under \$100. It's not hard to get on the Web, and if you're already there, it's a small step to start putting music tracks online.

But in what format? And how do you make it painless for people to hear your skanking grooves?

To backtrack a little, it's important to understand file sizes and data transfer rates. The size of the file and how fast it can fly (or more likely

crawl) down a modem are the two factors that will determine how easily your music can be accessed. Typically, surfers on the Web with a 28.8 modem will receive between 1Kb and 2Kb of data per second (kbps). With higher-speed lines, such as a corporate connection, this could increase to as much as 4 to 6kbps. When you consider that one minute of CD-quality stereo sound can consume 10Mb of hard disk space, it might appear to be an impossible task to try to stuff this elephant down a straw. It's here that sample rate conversion, compression, and streaming technologies come into play. All of them, however, involve decreasing the quality of your file. The various compression schemes achieve this with varying degrees of success.

If you're serious about uploading your music, you'll need a decent digital audio editor to prepare the files. There are plenty of free-ware and shareware programs on the Web that will cover most bases, but they aren't integrated with the streaming technologies and lack common DSP functions such as EQ and gain normalization. In the area of commercial software, RealAudio is reasonably well integrated with Sound Forge 4.0 from Sonic Foundry (Win95); Sound Forge can export RealAudio files, but can't open them for playback. On the Mac side, Peak 1.5 by BIAS performs similar functions. SoundEdit 16 (Mac) can also output both RealAudio and Shockwave files after you've installed the free plug-ins from Macromedia.

Take Advantage of the Browsers

By now, the need for audio over the Web is so apparent to Netscape and Microsoft that they have built player applications into the most recent releases of their Internet browser software. This means that the 3.0 versions of Netscape Navigator and Internet Explorer can handle standard audio file types without any additional software — a straightforward way to provide audio that is accessible to all and easy to implement. The .WAV, AIFF, MIDI, and .AU formats are also such standard file types that any server will already be configured to understand how to deliver them. I've even seen these files being delivered from AOL-based Web sites.

However, you'll need to perform some serious file size reduction on the audio before the file will be small enough for anyone to want to download it. The first step you can take is to make the sound mono: You'll have cut the file size in half by sending the same data to both channels. Even a mono version of a true CD-quality audio file is too way too large to realistically deliver: You're going to need to downsample the file to 8-bits and reduce the sampling rate to 11kHz before you get anything small enough to deliver without a huge wait. This is the standard file resolution for multimedia and Web delivery, and while it's a little noisy and rough, you'll only need 650Kb of data per song minute.

The reduced file also requires less effort on the machine that is receiving it to play back: Those who visit your site will need less RAM and CPU power to hear it. And since Netscape can handle these file formats internally, downloadable, down-sampled .WAV or .AIFF is an excellent option. Another advantage of providing

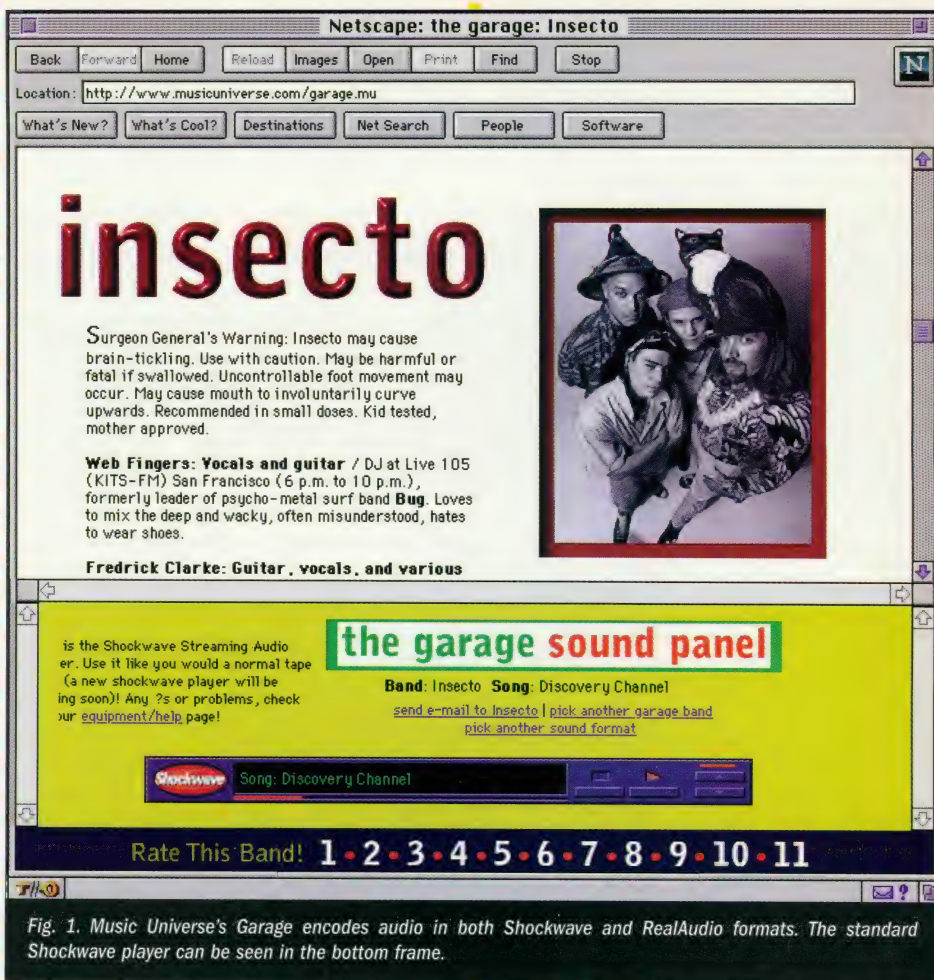


Fig. 1. Music Universe's Garage encodes audio in both Shockwave and RealAudio formats. The standard Shockwave player can be seen in the bottom frame.

lower-resolution audio for free is that your fans will have an incentive to go out and buy your CD to hear the real deal.

MIDI is a completely different type of file because it isn't a direct representation of sound waves. The main reason you'd choose it would probably be if you're creating Standard MIDI Files for playback on General MIDI synthesizers, and want to demo your work. It's also an extremely efficient method of delivering music over the Web since the file size is tiny. (For more details, see "MIDI Meets the Internet," page 36).

These standard file types can probably get you a long way toward delivering what you want across the Web. In the unlikely situation that the user's browser can't handle the sound, there are a plethora of "helper applications" to fill the gap. Because it requires little more than a standard digital audio editor, downsampling to 8-bit is probably the easiest way to provide audio. The downfall, naturally, is that users will still have to wait while your file downloads.

Enter MPEG

One established method of getting high-quality stereo audio across the Web involves MPEG 2 Layer 3 audio compression. While the MPEG standard is also for video, a good portion of the spec applies to audio and to audio-only files. MPEG can achieve compression rates between 6:1 and 20:1 and provide quality ranging from excellent to a warbled representation of the original file. It

manages this feat by the use of perceptual encoding, a means of tuning the audio so that all it contains is the sounds that are most significant to the human ear. Typically, hiss is more apparent to the listener during pauses, but the ear is less sensitive to a noisy background during loud passages, so more noise can be allowed here. Masking also plays a part: MPEG compression estimates the "just noticeable" noise level and then resamples the audio accordingly.

For Web delivery purposes, straight MPEG compression isn't ideal. Your site visitors will still have to wait patiently until the download is complete. However, it is an option. There are MPEG players available for all major platforms, and surfers can easily set their browsers to launch the appropriate player. The problem with preparing MPEG files for the Web is that common digital audio editors don't support this format. You'll need to find a stand-alone encoder.

Xing Technologies (www.xingtech.com) has a commercial product for the PC called the XingMPEG Encoder, and there's a shareware program called Cool Edit (available from www.syntrillium.com) that, with the assistance of additional MPEG filters, available from the same site, can also save these compressed files. Little in the way of MPEG audio tools is available for the Mac. And while there are efficient encoders bundled with Silicon Graphics machines, these machines are a far cry from the standard audio-editing computer. It's also

hard to tell how widely MPEG players have been distributed. Even the most advanced browsers can't play MPEG without the listener setting up a helper application. In sum, there are better ways to deliver audio than downloadable MPEG.

Like the options we'll be discussing below, MPEG is a "lossy" compression format, which means that the file is made smaller at the expense of audio quality. Another type of audio data compression, the Emagic.ZAP file, is lossless. Depending on the frequency spectrum of the audio, a zapped file can be between 10% and 50% smaller than the original, with a corresponding reduction in download time. Yet when unzapped (with a utility that can be downloaded for free at www.emagic.de), the file is restored to a bit-accurate copy of the original. The unzip utility is cross-platform, and intelligently decodes the compressed file as AIFF or .WAV depending on whether it's being run on a Mac or a PC. Files can also be self-extracting for delivery to systems where Zap is not installed. However, this file type is not yet well-known on the Web; time will tell how popular it becomes.

Options for the Impatient

Next we come to the "near realtime" audio delivery methods that take advantage of high-end compression schemes such as Dolby AC3 and MPEG: the streaming options. As we've already discussed, MPEG encoding is available for downloadable files, but the developers of the streaming techniques have added their own realtime delivery technology that can decode and playback the audio on-the-fly. For most of the streaming formats, encoders are available for both the PC and the Mac, and the fact that one can scale compression to the speed of delivery makes this technology well-suited to the Web.

You hear these compression techniques in action every time you listen to streaming audio. The companies that create the encoder software have licensed the compression and then added it to their own streaming schemes. To hear the results, you'll need their plug-in. As a content developer, therefore, you need to research the availability and stability of the various plug-in options before settling on the format you'll use.

Progressive Networks introduced RealAudio, the best known of all the streaming options, in

April 1995. The technology has now reached version 3.0 and provides much better quality audio over 28.8 modems than the former version. At the same time, Shockwave (from Macromedia) and the Liquid Audio process are also contenders for the streaming audio crown.

Variations on Dolby Labs' AC3 compression have been licensed for both RealAudio and Liquid Audio, and MPEG2 Layer 3 is used in Shockwave. To listen to these any of these files,

stable means to deliver Web audio, and the newest version is a considerable improvement. While better quality sound can be delivered, what has really changed about it is that the technology now partially supports standard Web file delivery techniques: You no longer need to use Progressive Networks' server software.

The RealAudio encoder (with which you compress the files and put them in the correct format) is available for free at www.realaudio.com and is a "click-and-go" tool: You can select the speed of the modem you are targeting and add author, title, and copyright information that will appear in the player's window. The encoder is available for both Windows and the Mac, and the encoder outputs a file with an .RA extension (see Figure 2).

Unfortunately, getting a RealAudio file to play back from a Web page is not quite as simple as a link: Clicking on such a link would generate a complete download of the file before playback. To stream the file to the user, you need create a "metafile." This is a text file that merely contains the URL of the actual audio file. Providing Web site access to your RealAudio files is analogous to creating hyper-links: When requesting these files, the links are to the metafiles, which in turn point to the actual audio files themselves. This metafile should have the same name, but be given a .RAM extension. To stream the RealAudio file without the special server software, the metafile must contain just one line of text:

<http://www.yourserver.com/audio.ra>

In preparing your directory of Web site files, you would save this tiny file as "Text with Line Breaks" and then upload the three files (the audio file, the metafile, and an HTML document that contains a link to the metafile) to a server. One of the bugbears of the RealAudio system for testing purposes is, in fact, this metafile. Because it has to contain the full Web address of the location of the file, it has to be in place on a server before you can play it back through a browser. Fortunately, the encoder will open your file so you can check it before you send it to the server, but the encoder contains no batch processing capabilities, so you'll have to prepare and check each file separately. A number of third-party companies have developed plug-ins for standard audio editors such as SoundEdit 16 and BIAS Peak, so you can forget about the encoder if you already have a tool that supports this format.

If you want to deliver live events, you'll need to use the Progressive Networks server software, because it relies on a different protocol. It can scale the quality of the audio to the available bandwidth, so your listeners will hear subtle degradation of the sound rather than abrupt dropouts if they're using a slower modem. If you're interested in Webcasting, you'll need hands-on access to a server so you can try out the software: It's available for a 30-day free trial from Progressive Networks, and licenses are sold on a "per stream" basis. Your final cost will depend on the number of simultaneous users you want to be able to hear any particular piece. Prices start at \$800

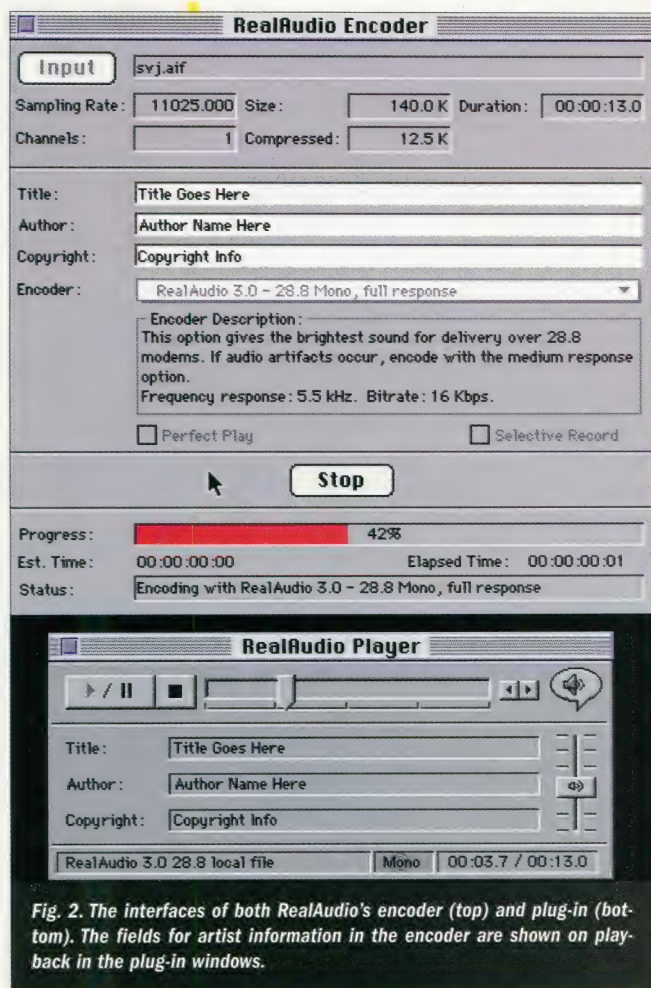


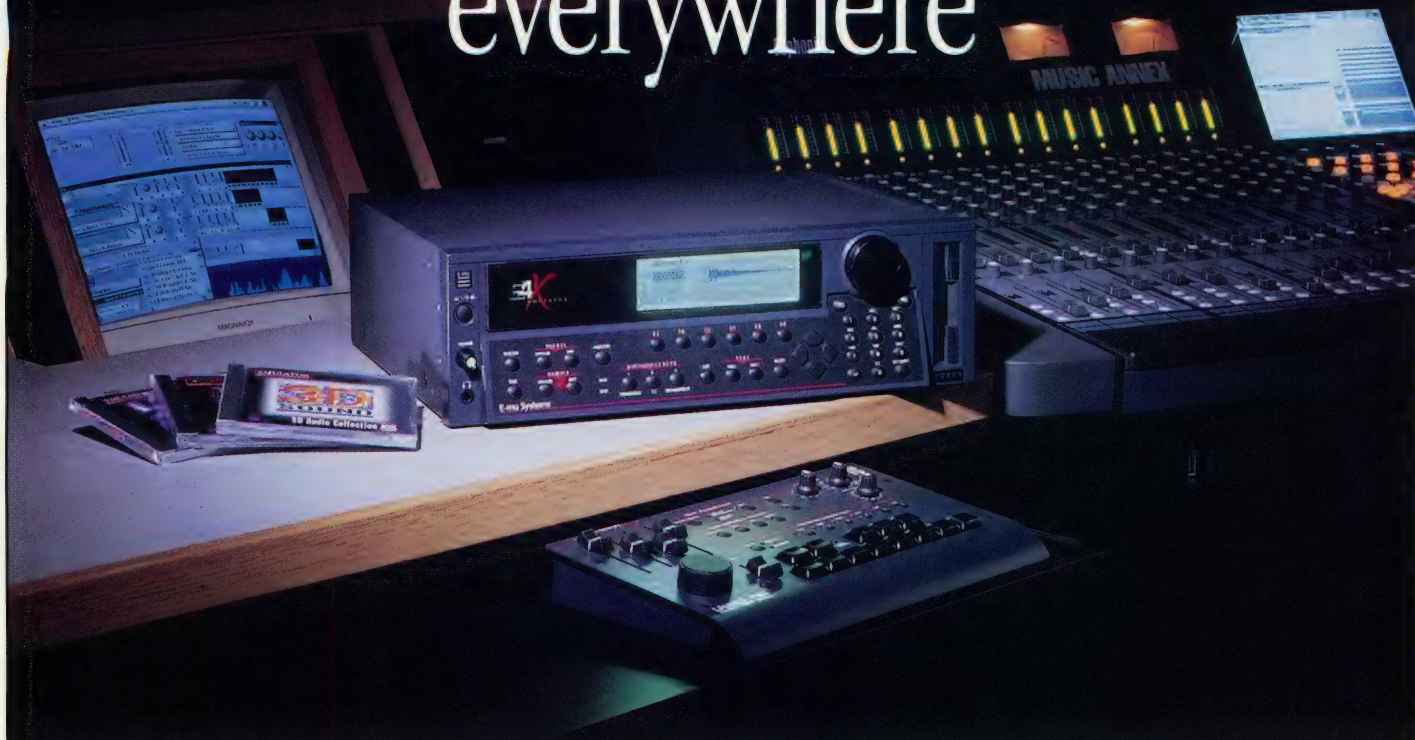
Fig. 2. The interfaces of both RealAudio's encoder (top) and plug-in (bottom). The fields for artist information in the encoder are shown on playback in the plug-in windows.

you'll need to have a specific plug-in, because the compression technologies have been melded with the companies' own proprietary techniques for streaming the sound.

The plug-ins are all free. If you choose to work with one of these formats, however, you'll also have to make sure that the server you are planning to use has been configured to understand the correct file type so it can deliver it properly. This configuration simply consists of a text entry in a list of formats that the server can push out. In Unix, this would be called "configuring the MIME types." (Unix is an operating system like MS-DOS or the Mac OS; it's used on many server platforms.) All you'll really have to do is ask your ISP (Internet service provider) if they're able to deliver files of the specific type you're considering.

With around 11 million downloads of the free player, RealAudio is an established and fairly

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Shockwave Streaming Sound

It may have been Macromedia's implementation of simple streaming audio for Shockwave that opened the doors for us to stream RealAudio files without server software. Recently hitting around 15 million downloads, the Shockwave plug-in has also been widely accepted. A sound file exported from Macromedia's Mac-based digital audio editor, SoundEdit 16, can be put on a server and streamed to a Shockwave interface.

To stream audio files with Shockwave you need SoundEdit 16 (Mac) or Director 5 (Win 3.1/95). You'll also need Afterburner — a free utility that compresses and outputs the Web-friendly files. No special server software is required. Afterburner is available from www.macromedia.com and includes template HTML files and the player. To hook up to your own

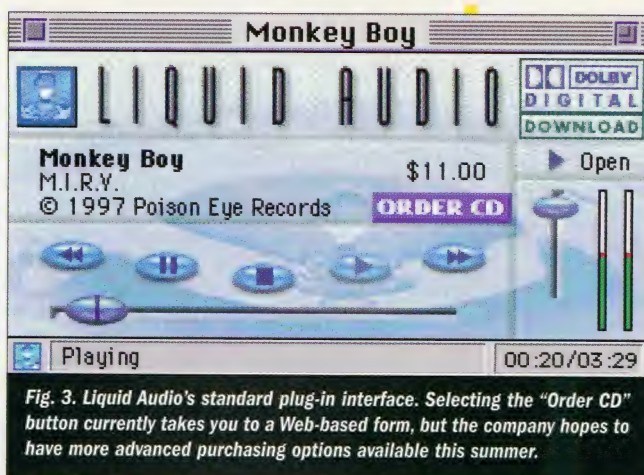


Fig. 3. Liquid Audio's standard plug-in interface. Selecting the "Order CD" button currently takes you to a Web-based form, but the company hopes to have more advanced purchasing options available this summer.

audio, you merely insert the location of your file into the HTML document. The player is

processing capabilities, so it's possible to gang up a batch of these files to be processed and leave

somewhat limited, however, in that it can't rewind or fast-forward.

To create Shockwave streaming audio, you have to downsample your source file to 16-bit, 22kHz and choose the appropriate Kbytes/second (kbps) for your targeted audience before you export the audio as a .SWA file. A good rule of thumb for conversion is that processing will take about three times as long as the file runs in real time. Both the Mac and Windows platforms have batch pro-

MIDI Meets the Internet

An Old Dog Learns a New Trick

By Jim Aikin

Been surfing the Web lately? Once the initial rush has subsided, you may have noticed that the experience is, to put it politely, somewhat less sensually gratifying than network television. The splashy graphics take forever to download, broken links are common, and the whole experience is eerily silent. (We won't even talk about how badly edited much of the text is.)

For people who are trying to sell you their products over the Web, or merely to enhance their company's image, anything that would cause you to experience irritation or, worse, lose interest entirely is a *problem*. Download time is limited by the speed of your modem, and it will be a year or two before faster pipelines are in place. Silence, though — we can do something about that.

Music can be added to a Web site in several different ways. In fact, the race to establish a standard format for Web music has gotten pretty heated. Every week brings fresh announcements of breakthrough technology. The main solutions, though, fall into two familiar categories: audio and MIDI.

Audio — even streaming audio, which is not the highest quality sound you've ever heard — has the advantage that the person on the receiving end can hear exactly what the developer intended them to hear. All they need is speakers, and most multimedia-ready computers have those. The disadvantage of audio is that it's high-bandwidth. A lot of data has to be transmitted and received every second, without interruption, for the listener to have an experience of the musical kind. And that data has to compete with the graphics.

MIDI is a stunningly appropriate solution for music on the Web. It's a relatively compact, low-bandwidth data format, which makes it ideal either for streaming (real-time playback) or for downloading an entire song file that can then be played back by your browser software. The disadvantage of MIDI is that it's at the mercy of the playback system in your computer. If all you have is a Soundblaster 16 with 2-op FM synthesis, the results will tend to be dismal. General MIDI, however, serves as a baseline standard for Web MIDI playback. Any GM synth or soundcard should be able to provide more than adequate musical performance for any MIDI-equipped site.

You may not even need the hardware. Several vendors are now providing plug-ins that do *host processor synthesis*, also known as software synthesis. This tends to require a faster computer, and even then can be so processor-intensive that it slows down your whole system. The advantage of host processor synthesis over soundcard playback is that a Web site developer can have greater assurance that you'll hear exactly the music that they intended, no matter what your hardware.

Yamaha's MIDiPlug (for URLs, see page 51) software synthesizer, which adheres, more or less, to Yamaha's XG format, is available for free download. It's not the only option. Macintosh owners can take advantage of the QuickTime Musical Instruments, or InVision Interactive's CyberSynth, both of which are GM soundsets. Microsoft has licensed the Roland Sound Canvas soundset, and is making it available as a software synthesizer.

What if you're not satisfied with General MIDI? You smart dog; you get an extra cookie. Thomas Dolby Robertson (better known as Thomas Dolby the *quondam* rock star) would like to talk to you about RMF. Also about Beatnik. His company, Headspace, has unveiled an ambitious suite of tools for interactive Web music. The core of the system is the Rich Music Format (RMF), a new file type that can encapsulate not only a Standard MIDI File but also alternate samples to fill special musical requirements, as well as copyright information and other useful goodies.

Beatnik comes in two flavors — the browser plug-in and the Beatnik Editor. The latter is used to create RMF files that can be played from any Beatnik-capable site. In addition to extending the GM sound set with custom samples, Beatnik allows an HTML page to be fully interactive musically: Numerous "expressive" parameters of the music, such as tempo and percussive interjections, can change in response to the end user's mouse movements.

The fact that the Headspace playback engine has been licensed by Sun Microsystems for inclusion in the Java programming language guarantees that Beatnik will be a serious contender. But of course, Microsoft is also a serious contender. Their Interactive Music Control, which is being included in Microsoft Internet Explorer, presents a different vision of interactive music on the Net.

Spearheading Microsoft's effort are programmers Todor Fay and Melissa Grey. Longtime *Keyboard* readers may remember Todor and Melissa from Blue Ribbon Software, makers of SuperJam (see *Keyboard* Report, April '94). When Microsoft acquired Blue Ribbon, it also acquired the SuperJam engine, a form of which is now embedded in the Interactive Music Control. This engine makes a MIDI soundtrack more entertaining by introducing minor variations within the current musical style. As with Beatnik, the MIDI performance is generated from a file by the plug-in rather than being streamed over the Net. Ditto for the quasi-random musical output from Koan, a plug-in from Sseyo.

Wildcat Canyon's Webtracks plug-in allows realtime streaming of MIDI data from a Web site; like Koan and the Interactive Music Control, Webtracks plays back using whatever synthesizer is hooked up to the computer. LiveUpdate's Crescendo plug-in also supports streaming, and LiveUpdate is working on their own software synthesizer, Crescendo Plus — not to mention a new development that reportedly is going to be able to play back synced MIDI and audio. And somebody else is sure to announce a major software release before this issue hits the newsstands. (For more background information, see "MIDI Rocks the Web" in the March/April '97 issue of *Music & Computers*.)

If your main interest in Web music is showcasing your own creative efforts, MIDI is not a very good solution. But if you're looking for opportunities as a composer or arranger of commercial music, a million downloads of MIDI playback plug-ins are bound to be good news. If you understand the file types and can handle the editing programs, get your résumé out there — or better yet, set up your own site with relevant demos. That way, Web developers can beat a path to your door. ■

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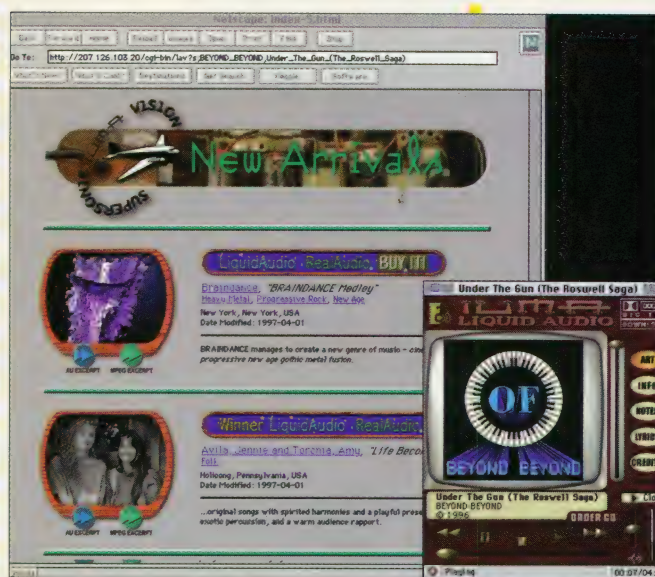


Fig. 4. IUMA's customized version of the Liquid Audio player. While the audio is streaming to the interface, users can click on the icons on the right-hand side of the player to view associated artist materials. This type of interface could also be created with Shockwave.

your machine to grind through them. Like RealAudio without the server software, though, Shockwave suffers from dropouts as bandwidth decreases. It also has a tendency to clip the tail end of the audio it processes. (A simple workaround for this is to add a few seconds

founded in January 1996 by veterans from the audio, music production, and multimedia software industries; it has specifically targeted the music industry's concerns — copyright protection and sales. Liquid Audio wants to establish the Web as a viable method for publishing

of silence at the very end of the piece.)

The sound quality of Shockwave audio is easily comparable to that of RealAudio; it certainly sounds better for voice. For production purposes, Shockwave is even a little better because you can test the audio from your hard drive before you upload to the server. Coupled with the fact that Shockwave has the additional capability of providing interactive multimedia together with your audio, the widespread popularity of the plug-in makes this a very solid choice.

Coming Soon . . . To a Screen Near You

The third player in the streaming audio arena is a relative newcomer, Liquid Audio. The company was

music and has licensed Dolby Digital compression as its algorithm for reducing file size. While online sales are still in the process of being implemented, the company plans to include a feature that would add some copyright protection to the file by encoding registration information in the file header. This would mean that bootlegged copies of the audio file could be traced back to the original download computer and associated with a credit card number.

The company's long-term vision is of a consumer market in which \$300 CD recorders would become a standard component in the home. These devices would let consumers audition songs from an Internet music distributor, download the full selections of their choice, and pay electronically via a credit card. The resulting audio CD disk could be played in a standard stereo system. Graphics, song lyrics, and other digital information could be included and either printed out or viewed.

The company has recently released a plug-in for Mac and Win95, and has developed encoders, including a module for Digidesign Pro Tools digital audio workstations and server software. All these tools, however, carry a hefty price tag, and Liquid Audio requires its own server software in order to deliver the sound. The company's entry-level package costs \$2,000 and includes hosting on the Liquid Music server and Liquefier Pro, the encoding tool for audio delivery. Other packages are scalable, ranging in price up to \$80,000 for a complete sales solution for

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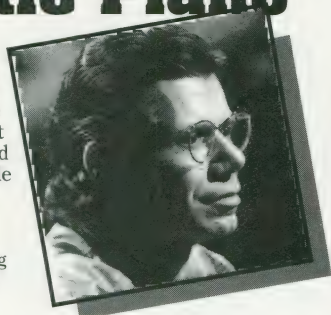
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major labels. The company is planning on rolling out all of these packages this summer. By the time you read this, full details should be available at www.liquidaudio.com.

Even though it supports an unlimited number of streams and holds much potential, the hurdles before Liquid Audio are still high: Its plug-in is so new that it doesn't have any history of adoption, and its audio streaming quality isn't much better than Shockwave's, or even RealAudio's.

Some real-world applications of this technology are already moving into view. New artists who sign up with IUMA will now get their songs encoded in MPEG, RealAudio, and Liquid Audio formats. The standard Liquid Audio interface is customizable by the site developer (see Figures 3 and 4) and has some multimedia capabilities, providing some song lyrics, a picture, and some band information. IUMA has created their own interface, but as of the time of writing, the online purchasing feature merely provides standard Web fulfillment: Clicking on the "Order CD" button takes you to a standard Web page where you can fill out a form. Until direct purchasing of data is available over the Web, you could just as easily create this type of interface with Shockwave.

Later this year, however, we should see some big developments for this technology: The company currently has a beta version of the Liquifier Pro (the \$995 encoder) that is able to include a watermark in the sound: An algorithm adds low-level noise modulation to the audio

containing information about both the purchaser and the distributor. The company hopes to have a new player released later this summer that will be able to handle encryption, watermarking, and online delivery. The plans also call for the player to be able to request the location of a user's CD-R drive so that it can burn the audio directly onto a CD without the need for additional software. If the company implements this capability, you'll never have a copy on your hard drive, which gives them greater control over the copyrighted material. Here's yet another technological hurdle to leap: It would be truly impressive if the company could stream directly to a CD without creating stacks of coasters. These are heady times indeed for new forms of music distribution.

Web Audio Now!

If you're not ready for the high dive into HTML and batch processing, your best approach to putting audio on the Web is probably to start on IUMA or a similar service. When you outgrow it, you can still use the page that lives there to draw viewers into your own more extensive site. Alternatively, you can deliver audio from your site from the start: An easy way to get going is to post downloadable .WAV, .AIFF or even MIDI files. For short excerpts, this method is the easiest and probably the most reliable.

If you're committed to broadcasting live events, RealAudio is currently your only choice, but you'll have to buy and install the server software. [Ed. Note: Just before press time (mid-April),

Waves Ltd. announced a hardware/software solution that includes several different Net formats.] Shockwave, on the other hand, can also provide the ability to meld streaming audio with interactivity, and with the distribution deals Macromedia has made, in the long term it may prove to be the more ubiquitous plug-in. And with its promise of copyright protection and sales over the Web, we may all get used to seeing the Liquid Audio plug-in in the near future.

Playing audio over the Web is fraught with perils, even ignoring the technicalities of HTML. The more exotic the technology you choose, the more troublesome it is to implement and the less likely the average Web surfer is to have the right software to hear your music. And any choice you make is a compromise between sound quality and the time it takes for the user to play back the piece. After you've decided to jump in, it's probably best to err on the side of caution and go a little overboard: Since you don't know the setup of the computer grabbing your tunes, provide several options. Once you can add standard files to your site, it's a small step to start experimenting with streaming sound. After all, most of the tools are free. ■

Chris Manners is the digital media manager for Miller Freeman's Entertainment and Technology Group, a speaker at Web Design and Development '97, and the principal of Lime Voodoo Productions, a multimedia design and development concern. He can be reached at cmanners@limevoodoo.com.

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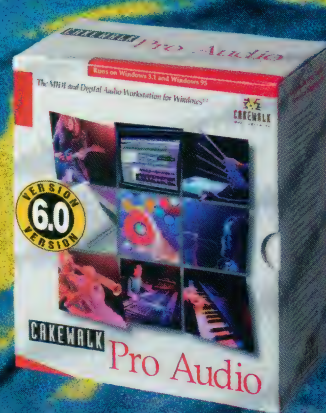
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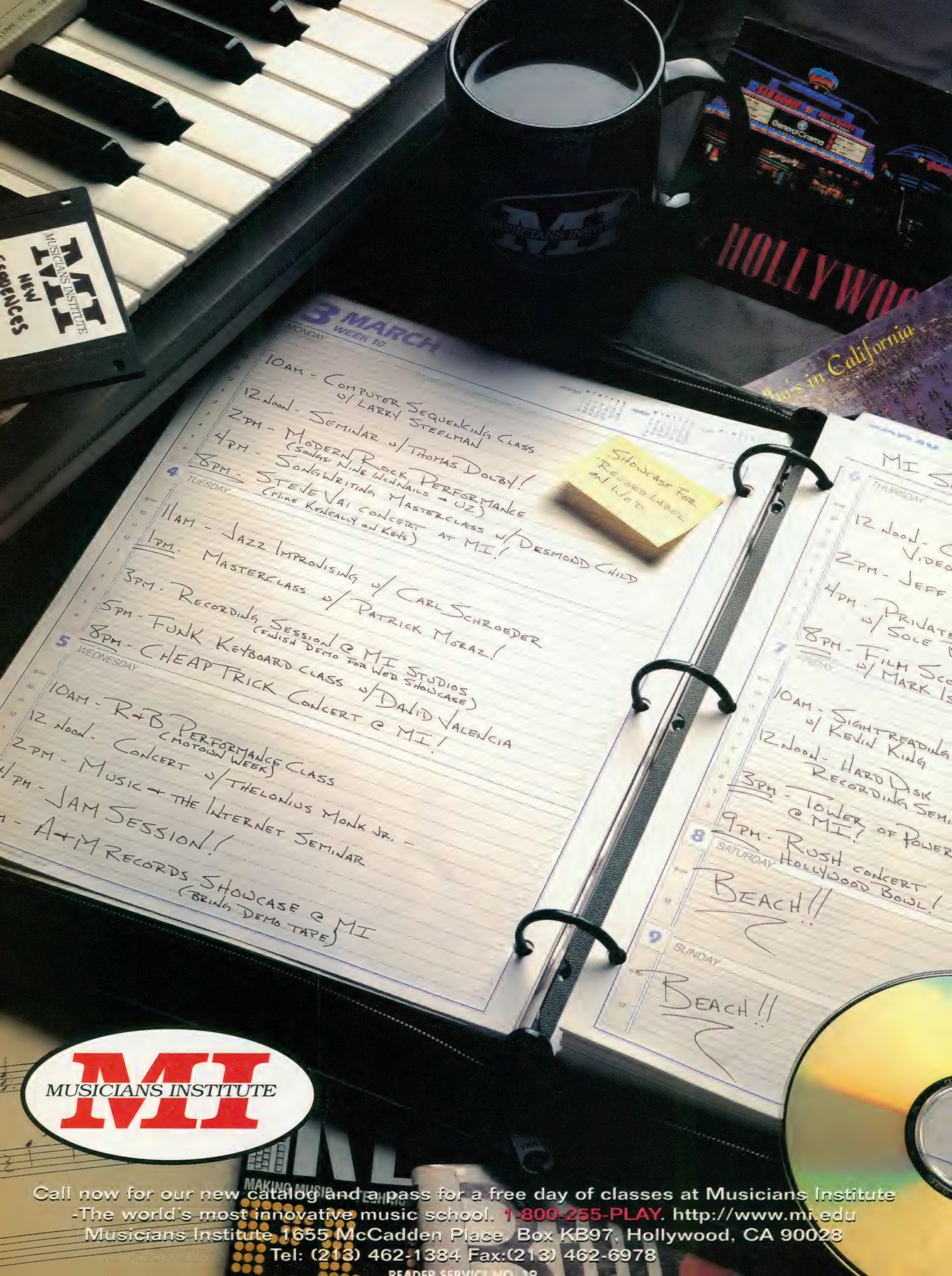
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2PM - MODERN ROCK PERFORMANCE
(SONGS: NINE WENNAHS - U2)
4PM - SONGWRITING MASTERCLASS w/ DESMOND CHILD
8PM - STEVE VAI CONCERT AT MI!
(LINE KEENEY on Keys)
TUESDAY
11AM - JAZZ IMPROVISING w/ CARL SCHROEDER
1PM - MASTERCLASS w/ PATRICK MORAZ!
3PM - RECORDING SESSION @ MI STUDIOS
(FINISH DEMO FOR WEB SHOWCASE)
5PM - FUNK KEYBOARD CLASS w/ DAVID VALENCIA
8PM - CHEAPTRICK CONCERT @ MI!
WEDNESDAY
10AM - R+B PERFORMANCE CLASS
(MOTOWN WEEK)
12 Noon - CONCERT w/ THELONIOUS MONK JR. -
2PM - MUSIC + THE INTERNET SEMINAR
4PM - JAM SESSION!
1 - A+M RECORDS SHOWCASE @ MI
(BRING DEMO TAPE)

SHOWCASE FOR
RECORD LABEL
ON WED.

MI S
12 Noon - VIDEO
2PM - JEFF
4PM - PRIVATE
w/ SOLE
8PM - FILM SC
w/ MARK IS
10AM - SIGHT READING
w/ KEVIN KING
12 Noon - HARD DISK
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.....SPECIAL REPORT..... 10 TESTED TIPS FOR PAINLESS MUSIC BROWSING

HEARING MUSIC ON THE WEB MAY BE EASIER THAN YOU THINK

BY JOSHUA SALESIN

If you feel like half the pages on the Web contain cool stuff and the other half are there to explain how to get it to work on your computer, you're probably not that far off. Juggling all the latest Web offerings requires some computer savvy, and this is especially true when it comes to audio. In fact, the typical Web browser is a mute entity, enhanced with audio playback only through the use of additional software modules called plug-ins. While these can fortify your browser with a host of new capabilities, they can also cause problems, or simply fail to do their intended job.

Most of the problems can be solved by installing and configuring the plug-in correctly. Once you understand how to find and install plug-ins, you should be able to overcome most difficulties, and can celebrate your accomplishments while listening to the latest tunes from around the world. If you find yourself at a site that promises to let you hear some music but you aren't hearing anything, just follow the bouncing ball...

FIRST THINGS FIRST

1. The Box

What kind of computer is needed to hear music from the Web? Since there are a number of different computer platforms as well as different audio formats, each with its own requirements, there is no one answer. However, most systems from the past couple of years will enable you to hear the variety of audio being offered on the Web. A PC user would do well with a minimum 486/66 DX, 16Mb of RAM, and a 16-bit soundcard (with a Windows driver), while a Mac user can get by with a 68K machine (680x0 processor) running System 7.5, 16Mb of RAM, and the Sound Manager extension (which is automatically installed as part of System 7.5). In addition, both systems will need some hard disk space and a 14.4 Kbps modem (though a 28.8 is strongly recommended) with a SLIP or PPP connection to the Internet.

To hear the music, of course, you'll also need to think about your audio output hardware. On the PC side, this will most likely be a soundcard, which will probably include some sort of MIDI synthesizer chip. On the Mac, you can use the internal speaker or plug

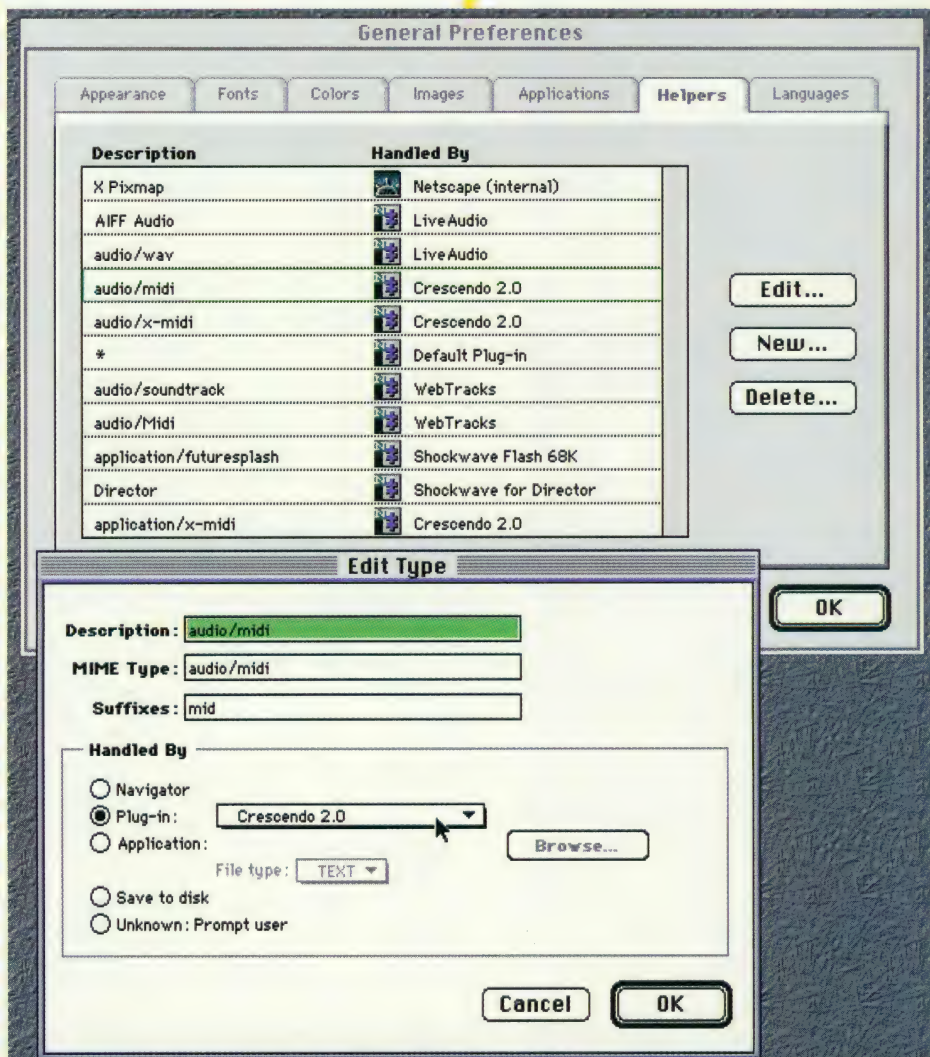


Fig. 1. To choose a plug-in or application to play a particular type of file within Netscape Navigator, select General Preferences under the Options menu, then select the Helpers tab and click on the Edit button. This button opens the dialog box at bottom, where you can choose a plug-in from a drop-down menu or an application by clicking on the Browse button.

the computer's audio output into your sound system, but in order to hear MIDI files you'll need a software-based General MIDI synth, such as the one included in QuickTime, or an external MIDI interface and tone module.

Of course, many of the things that you might do to upgrade your operating system, CPU, RAM, and modem will directly translate to better sound (in part because you'll be able to run more recent versions of the various

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10 TESTED TIPS

audio applications). In addition, certain types of Web audio require specific hardware, such as a Pentium or PowerMac based system or, in the case of Shockwave audio, a hardware floating point unit (FPU — also known as a math coprocessor). At this writing, Yamaha's MIDPlug, even though it's only a software-based MIDI player, not an audio playback engine, requires a PowerMac or Pentium.

2. Inside the Box

What software is needed to hear music from the Web? While specialized music browsers may be on their way, the *de facto* Netscape Navigator or Microsoft Internet Explorer Web browser software is currently your most likely window to the online music world. Since most sound files aren't in a format the browser can automatically play, its first response is to call on a helper application to handle the task.

In this scenario, the sound plays from a new application, separate from your browser. This second app uses more of your system's precious memory, and may require that the entire music file download (that is, be transmitted by the remote Web site and received in your computer) before being heard.

In order to overcome some of these drawbacks, small software modules called plug-ins have been developed. Instead of launching a separate application when you select a type of file the browser can't handle directly, the browser hands over a chunk of RAM and some window space to the plug-in, which plays the file. When playback is finished, the plug-in automatically closes and releases its share of memory as you continue to surf onward. This makes hearing audio from the Web faster and simpler, and spares you from having to juggle various applications.

3. Ready, Set . . .

How do you get plugged in? Thankfully, when you install your Web browser software for the first time, it typically includes a set of plug-ins to handle the most common file types. The latest versions of Netscape and Explorer support AIFF, WAV, AU, QuickTime audio, and Standard MIDI Files. The problems, if any, will crop up as you add new plug-ins, which may have to be configured properly in order not to conflict with the installed set.

If you paid for your browser software, it may also include a variety of other plug-ins, such as RealAudio or Shockwave for handling streaming audio. To find out your current capabilities, launch Netscape and choose "About Plug-Ins" from the Help (or Apple) menu. To add greater functionality to your browser, you'll need to download and decompress (using ShrinkWrap or Stuffit on a Mac, or something like PKUNZIP on a PC) new plug-ins from the Web.

As you install the file (Mac users double-click on the Installer icon, PC users run the .EXE file), the various components should automatically be placed into their proper places. However, if the installer simply puts the new files on your desktop or in some random folder, you may need to drag the plug-in

component into the Web browser's plug-ins folder. Then you'll have to re-launch your browser in order for it to recognize which plug-ins are available. While you're at it, read the README file that comes with the plug-in. These files are generally boring, but they often contain information that turns out to be pertinent to your system. (For instance, you may learn why you're still not hearing anything.)

4. Go!

What happens if you don't have the right plug-in? When you select a page that wants to transmit a file of a type that the browser can't understand, the browser looks to see if it has a plug-in or helper application to handle it. If it can't find one listed, the browser displays a "broken" plug-in icon, usually followed by a dialog box telling you what it couldn't understand. (For example, "This page contains information of type 'application/x-shockwave' that can only be heard with the appropriate plug-in. What do you want to do?")

To hear what you're missing, click on the Plug-In button, which should take you to a page on the Web where you'll find the plug-in needed to handle the type of file you requested. Netscape and Microsoft maintain these pages, which should either let you download the plug-in directly or provide a link to the site of the plug-in developer. It's always possible that the developer of a plug-in has failed to let the browser companies know about it; in this case, you may have to do a bit of searching to find the plug-in on the Net.

Take a moment to bookmark this page on the Netscape or Microsoft site, as it contains a definitive list of the current multimedia plug-ins. (For the URLs, see "67 Cool Sites," page 51.) After downloading and installing the selected plug-in (and re-launching your browser), you'll be ready to hit that Web page again.

5. Helping Your Browser

What? There's a problem? Truth is, your Web browser is likely to hang or crash when more than one plug-in is available that can handle a certain type of file. And since one plug-in can often handle several different kinds of audio formats, these conflicts are quite likely. Other times you may have the correct plug-in installed, but the browser launches the helper application instead, or does nothing at all.

In most cases, the solution is to reconfigure your browser's "helpers" — the list your browser consults to choose which plug-ins and helper apps to use for a selected type of file when it is encountered. Here's how to do it:

Within Navigator, select Options, General Preferences, and click on Helpers, as shown in Figure 1 on page 43. (Explorer uses Edit, Preferences, Helpers.) With Navigator 3.x, select the data type and then use the pull-down menu in the dialog box to select the plug-in or helper app you want to use. In 2.x, plug-ins don't appear in the dialog box, but are simply selected by whatever is in the "Plug-Ins" folder. In most cases this is all you'll need to do, though sometimes you may still

need to remove potentially conflicting plug-in files from your Plug-Ins folder. Occasionally, you may also need to supply your browser with additional information about a particular file type, subtype, and file-name extension, in which case specific instructions should be included with the plug-in or available on the developer's Web page.

NOW FOR THE FUN PART . . .

6. The World Wide Wait

Is there something wrong, or is it supposed to take this long before you hear anything? Depending on the format, audio files can be *some of the largest* on the Web. In general, the equation is simple: The higher the quality, the longer the wait. However, the speed of your connection to the Internet (determined by your modem and Internet service provider) will also play an important role. For example, if you were to download one minute of mono, 22kHz, 8-bit audio, or one and a half minutes of mono, MPEG layer-2 audio (a 1Mb file) using a 14.4 Kbps modem, you should expect to wait about 12 minutes before hearing anything (or half that for 28.8 Kbps modem). Given the various factors that can slow Net traffic to a crawl, the download could take even longer, but it definitely won't happen any faster!

7. Wading in the Stream

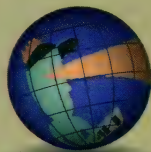
Isn't there some alternative? The unnervingly long wait to download an audio file has been alleviated by the growing popularity of streaming audio — music that begins to play while the rest of the file is still being downloaded. (For much more on streaming audio, see page 32.) While streaming audio can sound as good as an FM-radio broadcast, it may sound much worse.

A sure-fire way to improve your chances of hearing what the site developer intended is by using a faster modem. Allocating more memory to your browser can also help. (Mac users select the browser application in the Finder and choose File, Get Info, and adjust Preferred Size. PC users have to add more RAM). In addition, some plug-ins require increased disk cache sizes. The disk cache is the area on your hard drive used to house and access temporary downloaded data. (The disk cache can be adjusted from Netscape's Options, Network Preferences, Cache menu, or with Explorer's Edit, Preferences, Advanced settings).

To give you an idea, Shockwave audio files require you to increase your browser disk cache to 10Mb and application memory to 12Mb (or more). However, since each plug-in has different requirements, you'll want to check what each company suggests for their product. (See the URL list on page 51.)

Since Shockwave files (and some other plug-ins) typically launch an additional browser window containing the player controls, you can surf onward while you listen. However, be advised that the information from the new pages you load will compete with the audio data that is attempting to reach your computer in a timely manner (remember, this audio is "streaming"), causing the music to distort or

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10 TESTED TIPS

drop out completely. (This includes in-line animated graphics, which you can terminate using your browser's Stop button.)

The Shockwave player window will not automatically close when the file is finished playing. Taking a moment to manually close this window will help prevent your browser from running out of memory (which can cause the computer to crash!) as other windows or new plug-ins automatically open.

8. Getting Real

RealAudio is another popular format for streaming music. In fact, the Real Player Plus application can function as a standalone Web audio browser (*sans* Netscape or Explorer) with the ability to seek out and save your favorite music sites, songs, and stations. However, if you use this browser your selection will be limited to content encoded in RealAudio format. Also, each site can disallow saving of the RealAudio files. Unless these features are important to you, you'll be just as well off with the basic (and free) Real Player, which can't save files but will allow you to hear them.

Installing either Real Player helper application includes the RealAudio plug-in component for your Web browser, but most RealAudio servers are configured to call the player rather than the plug-in into action. The server makes the decision, not the browser.

As popular as RealAudio is, you can bet there are thousands of people who have had problems getting everything up and running. Luckily, Progressive Networks hosts a very informative set of help pages on their Web site. (See page 51.)

9. Tea and Synthony

Why does MIDI sound so shiddy? Actually, MIDI isn't to blame; by itself, it doesn't sound like anything at all. The problem, if there is one, lies in the synthesizer being used for playback. Compared with digital audio files, MIDI files are extremely compact, since they simply contain a set of instructions of what to play rather than the actual sound to be played. The latest Web browsers come equipped for MIDI playback using the LiveAudio plug-in (Netscape) or ActiveX technology (Microsoft), which simply route MIDI data to a sound source. While MIDI files can download very quickly, the sound you hear is completely dependent on your computer's soundcard or internal software synth. (For more on MIDI on the Web, see page 36.) If you have a PC, looking in Settings, Control Panel, Multimedia, MIDI to make sure your soundcard is selected as the default device. Mac users, make sure you have the QuickTime Musical Instrument extension in your Extensions folder and enabled in the Control Panels, QuickTime Settings dialog box.

While using a SoundBlaster (PC) or the QuickTime Musical Instrument extension (Mac) is a typical starting point, you can improve your audio experience with an alternate software synth. Significantly more impressive is Yamaha's MIDplug, a free 2Mb plug-in that

contains a standard GM-compatible MIDI sound set with up to 32-note polyphony. MIDplug plays MIDI files directly from your Web browser. Despite the fact that it will only run on a Pentium or PowerMac, and uses a good chunk of your computer's processor power, it can greatly improve the sound quality of the MIDI files you hear off the Web. Be sure to remove other MIDI-capable plug-ins from your browser's Plug-Ins folder before using MIDplug, or you'll likely hear only the sound of your computer restarting.

10. Making a Mark

If you're finding it difficult to organize your music collection when it's spread across 23 countries and 62 Web sites, then you're not alone. Rather than bookmarking a page with a song or live radio station feed on it, one strategy is to bookmark the exact song file. Simply click and hold the mouse on the audio file link until a pop-up menu appears within the browser window. Then select Add Bookmark For This Link (Netscape) or Add Link To Favorites (Explorer).

This file will be added to your bookmarks list and can then be labeled and organized within folder categories any way you choose. (You can also drag any of these bookmarks or folders from a Bookmarks/Favorites window to the desktop to create a launch-pad for your favorite tunes. At this point, double-clicking the file will launch Netscape, which will automatically dial up the site where the music is located.) Similarly, those pesky RealAudio ".ram" files that collect on your desktop after you listen to a song can be saved to a folder of your choice and double-clicked for a quick-connect to the server where the music is stored.

FUTURAMA

Why isn't there one music plug-in that can play everything? While it is a tall order to keep up with the rapid changes that audio on the Web is currently undergoing, some companies do have such an all-encompassing aim in mind. Knowledge Engineering's MacZilla (currently Mac only, with a PC version due out by the time you read this) is a single plug-in that will handle AIFF, .WAV, AU, MPEG, MIDI, QuickTime, and AVI files, while adding relatively little overhead to your browser. In many cases, it will also let you hear the music while it's being downloaded (even with audio formats that don't normally stream).

This all-in-one approach can save you from having to collect and juggle multiple plug-ins to extend the capability of your browser. Happily, Web browsers are expanding to include support for various audio formats with each new version. And although there will likely be new formats that require you to update your software setup, within a year or two we can look forward to reaching a truly painless interactive music browsing experience. ■

Joshua Salesin lives in Santa Cruz, California, where he spends time torn between music and computers.

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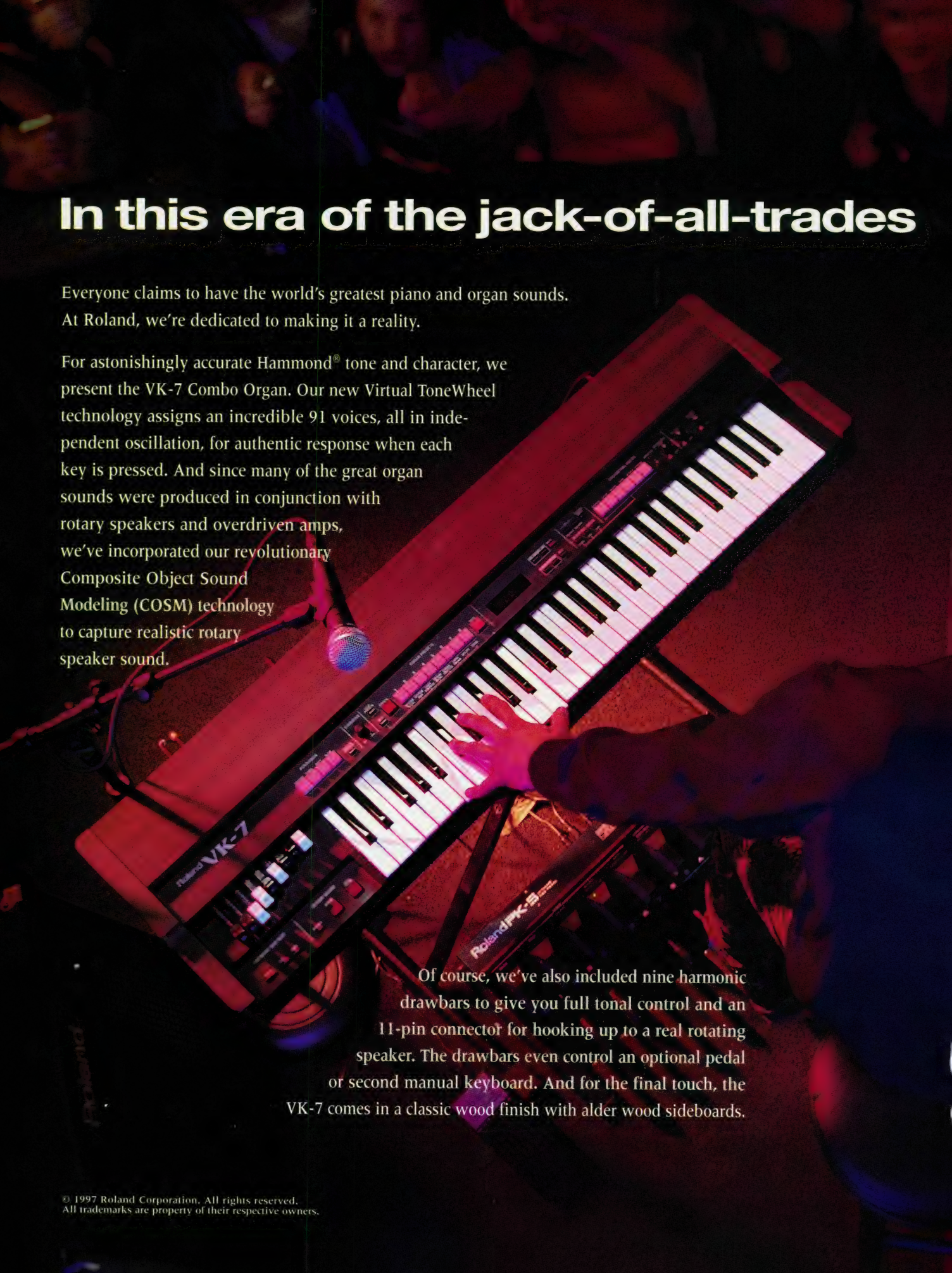
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Please read all rules carefully, and then sign your name in the space provided. If entrant is under 18 years old, the signature of a parent or guardian is required.

Each entry must consist of:

- Completed and signed entry form (or photocopy). All signatures must be original.
- Audio cassette(s) containing one song only, five (5) minutes or less in length.
- Lyric sheet typed or printed legibly (please include English translation if applicable).
- Check or money order for \$30.00 per song (U.S. currency only) payable to John Lennon Songwriting Contest. If paying by credit card, \$30.00 per song will be charged to your account.

Entries must be postmarked no later than 8/15/97.

1. Each song submitted must be contestant's original work. Songs may not exceed five (5) minutes in length. No song previously recorded and released through national distribution in any country will be eligible. **Contestant may submit as many songs in as many categories as he/she wishes, but each entry requires a separate cassette, entry form, lyric sheet, and entrance fee. One check or money order for multiple entries/categories is permitted.** (Entrance fee is non-refundable. JLSC is not responsible for late, lost, damaged, misdirected, postage due, stolen, or misappropriated entries.)
2. Prizes: Twelve (12) Grand Prize Winners will receive \$2,000 in cash, \$5,000 in Yamaha project studio equipment, and a \$5,000 advance from EMI Music Publishing. One (1) Grand Prize Winner will receive \$15,000 for the "Song of the Year" courtesy of Maxell. Thirty-six (36) Finalists will receive \$1,000. Seventy-two (72) Winners will receive portable CD players.

3. Contest is open to amateur and professional songwriters. Employees of JLSC, their families, subsidiaries, and affiliates are not eligible.
4. Winners will be chosen by a select panel of judges comprised of noted songwriters, producers and music industry professionals. Songs will be judged based upon originality, lyrics (when applicable), melody and composition. The quality of performance and production will not be considered. Prizes will be awarded jointly to all authors of any song; division of prizes is responsibility of winners. Void where prohibited. All federal, state, and local laws and regulations apply.
5. Winners will be notified by mail and must sign and return an affidavit of eligibility/recording rights/publicity release within 14 days of notification date. The affidavit will state that winner's song is original work and he/she holds all rights to song. Failure to sign and return such affidavit within 14 days or provision of false/inaccurate information therein will result in immediate disqualification and an alternate winner will be selected. Affidavits of winners under 18 years of age at time of award must be countersigned by parent or legal guardian. Affidavits subject to verification by JLSC and its agents. Entry constitutes permission to use winners names, likenesses, and voices for future advertising and publicity purposes without additional compensation.
6. To insure anonymity for judging purposes, entrant's name should appear only on the entry form. Do not put name or address on cassette or lyric sheet. Cassettes and lyrics will not be returned. Winners will be determined by December 15, 1997.

I have read and understand the rules of The John Lennon Songwriting Contest and I accept the terms and conditions of participation. (If entrant is under 18 years old, the signature of a parent or guardian is required.)

Signature _____ Date _____

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67 COOL SITES FOR INTERNET MUSIC

GET BROWSING!

BY DAN BARRETT

Music and audio are widespread on the World Wide Web. Here are a bunch of sites to help you get started in your explorations. This list is in no way comprehensive — there are thousands of other interesting sites out there — but it should keep you busy for a while. I have omitted Web sites run by major record labels, as they are easy to locate using standard search engines (Yahoo, AltaVista, Lycos, etc.). Many sites referred to elsewhere in this month's Web music coverage are included, however. As virtually all of the URLs begin with <http://>, I've omitted those characters. (The exception is the ftp URL for the Aminet MOD Archive, which does *not* begin with <http://>.) A few URLs don't use [www](http://); if it's missing, it's not a typo.

If you don't feel like typing, send your browser to the page on *Keyboard Central* (www.keyboardmag.com) where this entire article is provided complete with active links.

The Basics

First things first: Before you can hear all this cool stuff, you'll need the right tools.

- Crescendo (www.liveupdate.com/crescendo.html): Another Standard MIDI File player for Web browsers.
- Headspace (www.headspace.com): This is the home page for Thomas Dolby's software company, from which you can download the Beatnik music player.
- Internet Wave (www.vocaltec.com/iwave.htm): Some sites use IWave, an alternative to RealAudio and Shockwave. Here's where you can download the plug-in.
- Microsoft Interactive Music Control (www.microsoft.com/music/setup.htm): This is a starting point for downloading Microsoft's Web music tools.
- MIDplug (www.ysba.com/midplug_index.html): MIDplug, from Yamaha, is a plug-in for playing Standard MIDI Files found on the Web.
- Liquid Audio (www.liquidaudio.com): Source for the Liquid MusicPlayer and information about other Liquid Audio products.
- MOD files (www.howlingdog.com/modphile/modtools.htm): MODs are four-voice music files popularized by the Commodore Amiga but playable on other computers too. There are thousands of MODs on the Net, and here's where you can download players.

- RealAudio (www.realaudio.com/): Here you can download RealPlayer, the plug-in for receiving and playing RealAudio and RealVideo data.
- Shockwave (www.macromedia.com/): Here you can download the Shockwave plug-in for viewing Shockwave movies and listening to Shockwave audio.
- Sseyo (www.sseyo.com/) is the home page where you can learn about the Koan ambient sound plug-in.
- Wildcat Canyon (www.wildcat.com) is where you download their Webtracks MIDI playback software.
- WinPlay (www.iis.fhg.de/departs/amm/layer3/): Some sites are beginning to include MP3 files, a relatively new audio file format. WinPlay can play these files under Windows.

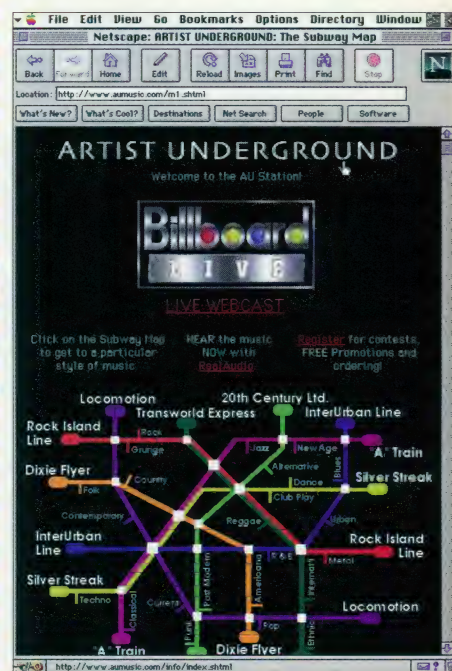
Unsigned Artist

The Net allows talented unknowns to demonstrate and market their music at low cost. Here are a few popular sites devoted to non-major-label recording artists.

- Artists Underground (www.aumusic.com/): Featuring about 80 artists in both preset recordings (RealAudio, .WAV, AIFF formats) and live Webcasts.
- Arts Corner (Italy) (www.vol.it/artscorner/): Independent artists from Italy playing experimental music, from jazz/fusion to solo flute to ancient Greek dance music (RealAudio).
- BandPages (www.bandpages.com/): Half a dozen independent artists in a variety of genres (RealAudio).
- Bay Area Bands (www.twirlme.com/bands/): A small selection of diverse bands from the San Francisco Bay Area (RealAudio).
- IndiSonic (www.indisonic.com/): Still more independent artists (RealAudio, Shockwave).
- IndyMusic.Com (www.indymusic.com/): Still more independent artists, and completely without ads (Shockwave, Java).
- Internet Underground Music Archive (IUMA) (www.iuma.com/): The best-known collection of independent music on the Web, with hundreds of artists and an updated Band Of The Week link (RealAudio, MPEG, Shockwave).
- Music Universe Garage (www.musicuniverse.com): Independent artists from the West Coast (RealAudio, Shockwave, AIFF, .WAV).
- RockWeb (www.rockweb.com): More indie artist pages (various audio formats).

Webcasting

Web broadcasting ("Webcasting") is increasing



New artists are featured on the Artist Underground site (www.aumusic.com/).

- in popularity as Web sites mimic traditional radio stations, with the added advantage of having multiple shows to choose from. Here are a few of the hundreds of stations available, including a couple that include live broadcasts.
- HardRadio (www.hardradio.com/): Claiming to be "the world's largest online music station," HardRadio provides 24-hour, commercial-free rock music (RealAudio).
- iMusic Radio Network (www.imusic.com/radio/): Playing retro, modern rock, techno, ambient, and jungle, with several radio shows to choose from. Visitors may vote to "smash or trash" (keep or remove) songs on the playlist (RealAudio).
- iRock (www.irock.com): One of the earliest Internet radio stations, iRock specializes in progressive rock à la ELP and Yes (RealAudio, IWave).
- LiveConcerts.com (www.liveconcerts.com/): Broadcasting live performances by blue artists via RealAudio: pop, rock, jazz, blues, gospel, and more. The site recommends membership (free) to reserve a spot to listen to shows. The Listening Lounge has recordings from previous concerts. ▶

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Call now for details on the One World Song
Contest You can win a trip around the world!
Are we mad? (yes, probably).

READER SERVICE NO. 27

67 COOL SITES

• Needle Drop (www.needle-drop.com/): Broadcasting live performances of popular music (RealAudio).

Oldies

The Net is one of the few places you can hear broadcasts from the early days of radio any time you want.

- Air.Time (www.mead.net/airtime/): Old radio shows from the 1930s to '50s, including music, suspense, comedy, and more (RealAudio).
- Old Time Radio (www.old-time.com/): More old radio shows from the '30s to the '60s. The focus is on weekly serials and commercials (RealAudio).

World Music

The Web gives us a chance to hear music from around the globe. Here are a few tasty ethnic tidbits.

- B'nei Shaare Zion Resources for Sephardic Music (www.bs2.org/seph-music.htm): Ancient Sephardic Jewish music, both vocal and instrumental. A chance to hear ancient Jewish styles and scales (RealAudio).
- Big Sky (www.bigskymusic.com/): Listen to "World Music Fusion" with strong Asian influences. Also contains a brief reference on traditional Chinese orchestral instruments (RealAudio).
- Canto Nuevo (www.cluborigin.com/rodogu/): Cuban music from a half-dozen artists (RealAudio).
- RV-OKINAWA (www.cosmosnet.or.jp/shimauta/RV-OKINAWA/index_e.html): Japanese music from the Internet Radio Web of Okinawa (RealAudio).

General Music Resources

These all-in-one sites have musical recordings, live broadcasts, and more.

- AudioNet (www.audionet.com/): CD jukebox for listening to new recordings; live concert broadcasts; and an index of Internet radio stations. Also much non-music audio, such as news and sports (RealAudio).
- iMusic (www.imusic.com/): Music news, reviews, audio clips, broadcasts, and more (RealAudio).
- Sonic State (www.sonicstate.com/): Mainly devoted to alternative music. Its Internet Demo Bank features unsigned bands. Interesting bonus: a directory of synth manufacturers (RealAudio).

Music Stores

The future of music shopping online means previewing any album before buying it. Well, the future is here now, almost. These sites offer a tremendous number of audio clips.

- East-West (www.eastwestsounds.com): East-West's large catalog of samples is slated to be available for download via a secure credit card transaction system by the time you read this.
- Mass Music (www.mass-music.com/): A purported 200,000 audio clips. Their selection is more mainstream than that of Tunes, below (RealAudio).
- Tunes (www.tunes.com/): They claim to have 300,000 audio clips online. Even relatively obscure bands are represented (RealAudio, Java).



East-West has developed a new way to deliver downloadable samples; check it out at www.eastwestsounds.com.

Plug-in & Software Sources

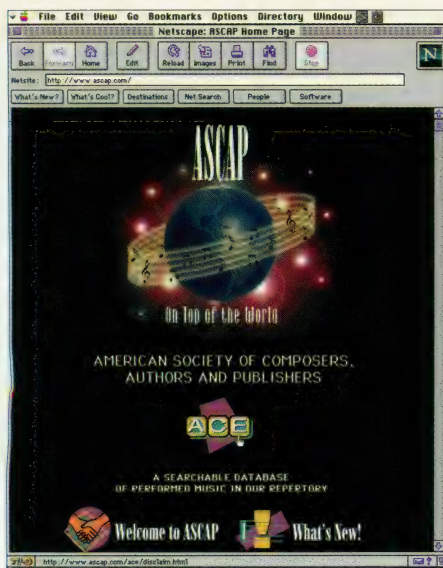
Still trying to get your browser set up to hear music? Maybe these sites can help.

- Explorer plug-ins (browserwatch.iworld.com/plugin.html): Lists and links for the current Internet Explorer plug-ins.
- MacZilla (www.maczilla.com/): Knowledge Engineering's MacZilla plug-in is available here.
- Netscape (home.netscape.com/comprod/products/navigator/version_2.0/plugins/): Lists and links for the current Netscape plug-ins.
- QuickTime (www.quicktime.apple.com/sw/): Get the Apple QuickTime software synth here.
- Syntrillium (www.syntrillium.com): Source for a shareware audio editor called Cool Edit, which is useful for encoding audio files for upload.
- Xing Technologies (www.xingtech.com): Both streaming and MPEG-encoded audio and video can be delivered by these folks' software.

Miscellaneous

Don't miss the sites in this grab-bag.

- Aminet MOD Archive (<ftp:wustl.edu/~aminet/dirs/treemods.html>): One of the largest MOD directories on the Net. Requires the "lha" de-archiver program, available from www.shareware.com (search for "lha"). Note: This URL begins with ftp, not http://.
- Apple Computer Product Info (product.info.apple.com/productinfo/datasheets/): Find out which Macs have an FPU (math coprocessor).
- Carving Knife Records (zappo.prognet.com/): Raw punk rock, loud and uncensored. The occasional skips and static caused by network delays fit right into the music. Not for the squeamish (RealAudio).
- Chicago Sun-Times Music Previews (www.mpmusic.com/suntimes/): Listen to musical excerpts from current releases in all genres, from hip-hop to classical (RealAudio, .WAV, MPEG).
- A Dose of the Dead (www.morningdeal.com/dose.htm): Yes, it's the Grateful Dead in concert. Plenty of live recordings to satisfy ardent deadheads (RealAudio).
- Loop Engine (www.nicom.com/~macinnis/LOOPS.html): Download a new sample loop each week for use in your own music (.WAV and AIFF formats).
- National Public Radio (www.real.com/contentp/):



ASCAP has a searchable database for locating song titles, authors, publishers, and more (www.ascap.com/).

[npr.html](#)): When you've had enough music, plug into NPR, where you can hear entire news shows for the day (RealAudio).

- Primus Drums (www.ionmusic.com/ionshock/drums.html): Play a drum kit "live" with your mouse. Fun! (Shockwave)

- RealAudio Help (www.realaudio.com/help/FAQ/ or www.realaudio.com/help/library/). Error messages explained, and more.

- Res Rocket Surfer (www.resrocket.com/): Looking to collaborate with other musicians on the Net? This site makes it possible, in real time. If you have the patience to wait through the interminable download time on this all-graphics site, there are powerful possibilities here (Shockwave).

- Shockwave Help (www.macromedia.com/support/shockwave/): Learn more about where to get your Shockwave plug-in, and how to configure it.

- Shockwave Site of the Day (www.macromedia.com/shockzone/ssod/): Come see what the Shockwave site maintainers have found today. Usually quite interesting (Shockwave).

Resource Directories

These useful sites don't have audio themselves, but they contain indexes of other audio sites.

- Games, the Ultimate Resource (games.2nd.net/): An index of the "best" Shockwave and Java games, according to the site maintainers. Quite a number include sound.

- Point Music Sites (point.lycos.com/reviews/database/enmu_e.html): The top-rated music sites on the Net, according to Point maintainers. A service of the Lycos search engine.

- Timecast RealAudio Site Guide (www.timecast.com/fsiteguide.html): A treasure trove of RealAudio, listing hundreds of sites that include RealAudio clips. Timecast is marred by a poor user interface that presents sites only ten at a time and doesn't reload its pages (frames) properly, but the information is good.

- Yahoo's Internet Broadcasting Sites (www.yahoo.com/) (search for phrase: "Internet

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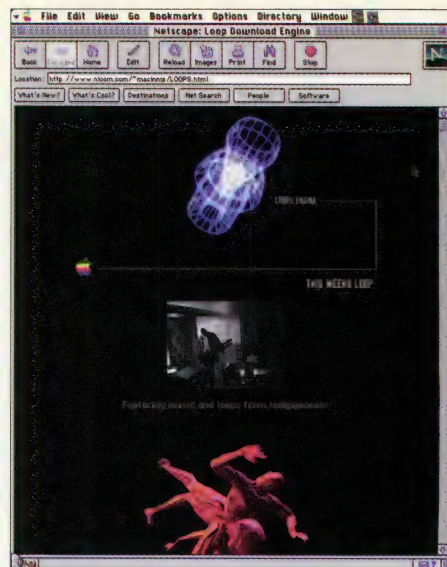
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67 COOL SITES



You can download a new sample loop every week from www.nicom.com/~macinnis/LOOPS.html.

broadcasting"): A large listing of Internet sites that broadcast music.

- Yahoo's Shocked Sites (www.yahoo.com/) (search for phrase: "shocked sites"): Locate Shockwave sites around the Net, including games that use audio.

Copyright Issues (USA-specific)

Before putting excerpts of someone else's music (or your own) online, know the rules. Copyright violations can land you in trouble with the law.

- ASCAP (www.ascap.com/): Among its many services for musicians, ASCAP has ACE, a searchable music database to locate titles, writers, performers, and publishers for licensing purposes.
- BMI (www.bmi.com/): BMI, like ASCAP, has a searchable music database, the Hyper Repertoire, to locate titles, writers, performers, and publishers, plus additional information about licensing.
- Copyright FAQ (Frequently Asked Questions) (www.aimnet.com/~carroll/copyright/faq-home.html): More in-depth than the Ten Big Myths article, and easier to read than the technical info at the US Copyright Office (below).
- The Harry Fox Agency (www.nmpa.org/hfa.html): Harry Fox is a central agency for licensing copyrighted musical works.
- Multimedia & Entertainment Law Online News (www.degrees.com/melon/): A source of articles on several of the legal aspects of being a musician in the digital age.
- Ten Big Myths About Copyright Explained (www.clari.net/brad/copymyths.html): A famous and easy-to-read discussion of basic copyright issues.
- U.S. Copyright Office (lcweb.loc.gov/copyright/): The definitive source, complete with forms and legal gobbledegook. Reasonably understandable, but not a quick read. ■

Dan Barrett (dbarrett@ora.com) is the author of NetResearch: Finding Information Online [O'Reilly & Associates], a guide to power searching on the Net. He also writes the monthly Net Smarts column for Keyboard.

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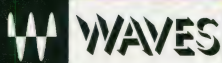
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READER SERVICE NO. 32

COPYRIGHT & LICENSING FOR INTERNET MUSIC

BY DEAN L. SURKIN, ESQ.



SPECIAL REPORT

According to the radical wing of the cyber brigade, "Information wants to be free." Once something has been uploaded onto the Internet, thousands of digital copies can (and probably will) be distributed all around the world within a few days — and once the genie is out of the bottle, it's tough to stuff him back in.

At the same time, musicians (like writers and artists in other fields) have a vital interest in being able to make money by selling copies of their work, which means limiting access to those who have paid for it. The copyright law exists to protect our rights in this area.

So how is copyright faring in the Brave New World of the World Wide Web? For some background and a legal update, we turned to occasional Keyboard contributor Dean L. Surkin, an entertainment and tax attorney with the firm of Surkin & Handlin, P.C., in Manhattan. —Editor

The copyright law is the basis for compensating artists for their work. About 15 years ago, I wrote an article, "Copyright Primer for Musicians," that appeared in *Keyboard* (Aug. '83). At the time, I could not even conceive of dissemination of music via the Internet, even though I had a few years of experience with legal research over dial-up services.

Nor did the copyright law conceive of online music. Historically, the copyright law has had to deal with technological changes in a catch-up fashion. With remarkable speed, however, Congress

enacted the Digital Performance Right in Sound Recordings Act of 1995. The 1995 law took effect February 2, 1996.

To understand how the copyright law applies to the Internet, you need to understand how copyright owners are compensated for other kinds of sales and performances — so let's start with some background.

Live performance. When an artist performs a song before a live audience, the owner of the venue must compensate the owner of the performance copyright. Usually, performing rights associations such as ASCAP and BMI negotiate blanket licenses with various venues. The performing rights association pays 50%

of the royalty received to the publisher of the composition and 50% to the composer.

Broadcast over radio or television. When a radio or television station broadcasts a performance, the radio station must compensate the performing rights association. As above, the performing rights association then pays the publisher and the composer. Even if the broadcast is a broadcast of a sound recording, the owner of the copyright in the recording receives no payment. The record company historically has benefited from broadcasts through increased sales of the recordings.

Sale of a tape, CD, or other copy. The record company, as owner of the copyright in the

sound recording, receives payment for each copy sold. Under contract with the artist, the record company pays a royalty to the artist. The record company also pays a royalty to the owner of the copyright in the composition — usually the publishing company. The publishing company then pays a royalty to the composer.

When the artist is the composer of the song, the recording company often demands that the artist/composer sign over the publishing rights to the record company. The artist typically agrees, because the recording company has the clout. The artist needs the record company to get exposure. But with a deal like this, the artist no longer has control of the

publishing rights, and the record-company-controlled publisher can administer the rights any way they want.

Because musicians are reluctant to give up their rights, there has been a long history of independent, self-financed recordings. I know of many singer/songwriters, particularly in the folk music scene, who finance their recordings and pay for the expense of copying tapes and pressing CDs. They sell the copies at their concerts. Many of these musicians have been able to earn reasonable incomes without hit records, radio play, or national distribution.

The similarity between this and Internet distribution is obvious. For Internet distribution, while the artist must still pay for production of the master tape, the artist does not have to pay for making copies if the digitized recording is simply uploaded to an Internet server.

The first question that arises, then, is what artists need to do to protect their copyright to uploaded music. The second question is how they can expect to earn money from this type of distribution. And what can you do if you find somebody distributing your music without permission?

Internet music. Music on the Internet has some of the qualities of a broadcast or live performance and some of the qualities of the distribution of a copy. For example, if you access a Web page and hear a brief .WAV file every time the page opens, your use of the file is similar to hearing a radio broadcast. If, on the other hand, you download a file, save it to your hard disk, and later play it back, your use of the file is similar to buying a recording that you can play back at your leisure. Not only that, but you have the technological means to make copies of the file, just as you have the means to copy tapes or CDs.

As noted above, a broadcast invokes performance rights, with royalty payment to the composer but not to the record company. A sale of a copy of a recording invokes the copyright in the sound recording itself, with payment to the record company (and license fees by the recording company to the artist and publisher).

The 1995 Act addresses this point of confusion by creating a new right under the Copyright Act that relates to digital audio transmission. The right benefits the owner of the copyright in the sound recording (*i.e.*, the record company). The new right is defined as the right to perform a work publicly by means of a digital audio transmission.

In general, a digital audio transmission without the permission of the copyright holder (remember: the record company, not the composer) is an infringement. The transmitter (such as the owner of an Internet Web site) must secure permission by an individually negotiated license or, in certain circumstances, by a statutory license (also called the compulsory license). The transmitter must, of course, make royalty payments under whichever license he or she has.

The compulsory license, by the way, derives from the U.S. government's desire to prevent the Aeolian Piano Roll Company from having an

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unshakable monopoly in the piano roll business. The 1902 Copyright Act provided that a copyright owner could decide whether or not to license a composition to a piano roll company. However, once the copyright owner licensed the composition to one piano roll company, any other piano roll company had the right — the compulsory license — to make their own piano roll of the composition upon paying the statutory fee.

In the field of sound recordings, the Harry Fox Agency typically handles negotiations for the recording companies and publishers. If no initial recording is made, the compulsory license rule doesn't apply, and the composer can say no to any request for a recording. To those of you

who remember the late 1950s, when white musicians often made watered-down cover versions of R&B hits, the compulsory license is the answer to the question, why did the artists permit some of those recordings to be made?

Limitations on the digital audio transmission right. Certain digital transmissions require the permission of the copyright owner of the recording, while others are subject to a compulsory license. To fall under the compulsory licensing provisions of the new law, the transmission must be non-interactive (that is, it must not be part of a standard Web site or BBS), and it must be part of a subscription service. If you feel your usage of someone else's

recordings will be covered under the compulsory licensing provisions, consult a lawyer before proceeding. Otherwise, plan on negotiating with the copyright owner for your usage.

Depending upon whether the transmissions are subscription or non-subscription transmissions, the license fee is treated differently. A subscription transmission is controlled and limited to particular recipients who pay for it (almost like a magazine subscription). For non-subscription transmissions, the featured artist and non-featured artist receive payments pursuant to contract. The featured artist is the one whose name appears on the recording. Non-featured artists are the session players. For subscription transmissions, the license fee is distributed 2.5% to non-featured musicians, 2.5% to non-featured vocalists, and 45% to the featured artists. This leaves 50% for the record company.

The license fees do not diminish copyright royalties that are otherwise payable. Finally, the copyright notice encoded in the digital audio transmission must be delivered as encoded. This is similar to the provision in publishing that the book must be sold with the copyright notice intact.

What does this mean to you as a musician?

If you're planning to upload your own songs to your own Web site, all you need to do is make sure that the files include the proper copyright information in the header. (It would also be a good idea to add a text copyright notice next to the link with which files can be downloaded.)

If your record company wants to make your music available on the Web, you need to talk to your manager or attorney to determine how you will be recompensed for this usage under your current contract. When negotiating a new contract, you should make every effort to retain the digital audio transmission rights, as this will be an increasingly important delivery medium in the future.

What should you do if you discover that somebody has taped one of your concerts and uploaded it to their Web site without permission? If it's a fan site for your band and is offering freebies, you might be flattered, but you should ask them to substitute a file that is encoded with the correct copyright header. Also, check with your lawyer, because your record company contract may limit who can distribute digital audio versions of your music. If it's a bootleg site where somebody else is making money off of your music, you should consult an attorney immediately about taking steps to collect the royalties due you, and/or forcing them to stop the distribution. Due to the worldwide nature of the Web, the site might be in another country, so asserting your rights may not be easy or cheap. As in other areas of the law, what's legal and what's practical are not always the same thing. ■

Acknowledgment: The author would like to thank attorney Anthony R. Berman, who maintains a site devoted to Internet legal issues (<http://www.degrees.com/melon/>), and who was helpful in guiding some of the research for this article.

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...you might think of it as a Minimoog for the '90s ...Few mono synths make a more rambunctious sound than this one ...one of the neatest arpeggiators ever... (Keyboard Magazine, Nov. '96)

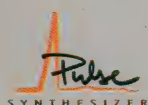
...the Pulse is an exclusive and mighty synthesizer, on the edge of the time, with lots of special features paired with an outstanding, classical sound (Keys Magazin, March '96)

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...programming is a breeze and in no time at all I was able to create interesting, overloaded lead sounds, rich filter sweeps, beautiful solo patches, chirpy sequencer fodder, lush pulse with modulations, clangorous noises, warbling "shooting star" sounds, rumbling thunder, thumping basses, dynamic sync leads... (Sound on Sound Magazine, Feb. '96)

...just one voice, but what a voice... the filter of the Pulse works effectively and sounds excellent...the Pulse synthesizer covers the complete "vintage" sound spectrum (Keyboards Magazine, Feb. '96)

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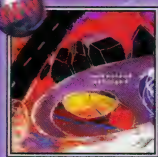
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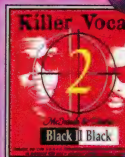
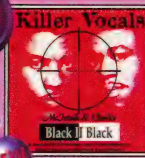
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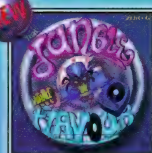
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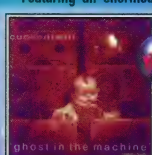
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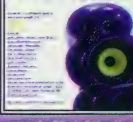
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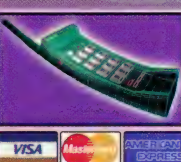
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DEPECHE MODE

Resurrected!

PHOTO SOURCE ANTON CORBIJN

The departure of keyboardist Alan Wilder in 1995, coupled with frontman David Gahan's near-death antics a year later, almost drove a stake through the heart of Depeche Mode. But to many a Modehead's amazement, the remaining members (Gore, Fletcher, and Gahan) managed to pick up the pieces and carry on. With Tim "Bomb The Bass" Simenon and his production team in tow, the band locked themselves into the studio and emerged 15 months later with a remarkable new record.

Ultra (Mute Records) is Depeche Mode's 12th full-length release, and while down-tempo is the name of the game this time around (the swiftest track tops out at a turtle-like 100 bpm), the CD is an ear magnet. "Barrel of a Gun," the first track out of the gate, is one of the most riveting Mode singles yet — replete with throbbing synths, liquid bass, slappy percussion, sci-fi bleeps, and tortured vocals. And there's plenty more where that came from. Stay tuned for a slew of Mode singles, videos, and remixes in the cue.

We rolled tape with songwriter Martin Gore recently, and were able to fire off a dozen questions in the allotted time; appropriate, perhaps, since *Ultra* is the band's 12th album. For some additional insight, however, be sure to check out the in-studio sidebar on page 68.

When Alan left the band, did it feel like the end?

As bad as things were, I don't think any of us felt that we wanted to split the band up and finish. I think the

low point of the band was when Dave had his [personal] problems. At that time, for me, it seemed like there wasn't really any point in continuing. But fortunately Dave decided to make a change in his life, and since then, everything has been quite easy.

How did the new balance affect the making of *Ultra*?

This time around it was much more a team effort. I had an idea to work with Tim Simenon 'cause we'd known him for years, and he'd done a couple of remixes for us in the past. But we were totally unaware of the way he worked: He always works with the same team, which includes a programmer, a musician, and an engineer

[see sidebar]. In a way, Tim and his team helped to fill Alan's shoes. Alan was always the so-called musician in the band; the one who was classically trained. But it went far better [with Tim] than we ever could have imagined. We went into the studio to try out a couple of tracks just to see how things were, how we were getting on, how it would work with Tim as producer, and to test his team out. We didn't set ourselves any large goals. It was a question of trying out a few tracks, and maybe getting a single out of it, and if things were going really well, then we could carry on and maybe make an

album. So after the first recording session, about six weeks, it became very apparent that things were going well, and we decided to carry on with the whole project and make it into an album.

How did you write this batch of songs?

I think I still write in pretty much the same way as before. I always start on guitar or piano, and get the basis of a song together before I move on to computers, keyboards, samplers, or whatever. I feel it's important to know that the song is strong before you get carried away with technology, because sometimes you fool yourself. You might think you've got a great song going, but in actual fact, what

you're really liking is a synth sound or a bass line.

We've always been about songs — marrying songs with technology — and I think that sometimes that point gets lost. We often get cited as an influence by a lot of bands and producers, but it's more because we were an early electronic band, and more because of the way we created music as opposed to the actual songs. ▶

Is melody usually the first element you focus on when writing?

Yeah, I think it is about melody, but it's also about emotion. If at the moment I sit down and write something and it moves me, I realize that there's a fairly good chance I might be able to move somebody else.

So after the initial piano/guitar-writing phase, you sequence your song ideas.

Yeah. At home I've got a basic setup for demos. I've got [Hybrid Arts] ADAM machines for the recording, and I program on [Steinberg] Cubase. I use an Akai CD3000, a [Roland] JD-800, and a [Clavia] Nord Lead. The Nord is a very interesting synthesizer — the fact that you can record all your movements real time into the computer, wave sweeps and everything. I like it. I've also got three ARP 2600s and two Minimoogs. But I tend to keep things very basic at that stage.

How did your home versions translate to the studio sessions?

I made tapes and sent them out to Tim and the rest of the band, and then we went into the studio. It was a very different process for us this time. Sometimes there were three or four different things going on at once in the studio. There was a programmer, a musician, Tim, me, Dave, and sometimes we might all be working on different things. Dave might be practicing his vocals, I might be doing something with Tim, the programmer might be working on a rhythm track, and the musician might be off working on a totally different track.

Did any of your demo tracks end up on the record, or were they all re-recorded?

It really differed from song to song. Sometimes the essence of what actually came out, what was released, was actually on the demo. But sometimes we totally pulled a song apart. If we felt that the basic song was good, but the direction of the demo wasn't

quite right, we'd pull it apart and maybe reconstruct it three or four times before we were happy with it.

Taking a song like "Barrel of a Gun," for example, how similar was the final mix compared to the demo?

"Barrel of a Gun" was one that remained very similar to the original demo. All the parts were basically there, so it was just a question of bettering the sounds and making it a bit harder. But that was probably one of the most similar demos to the finished version.

The opening drum sequence is a real attention-getter. Is that a loop?

I think we originally started off with loops, and then tried to recreate them. It's very hard sometimes because a loop has an immediate atmosphere, but you don't always want to use a loop. So in this case it was a matter of recreating it by cutting up various loops to get snares and bass drum sounds.

Ultra is a down-tempo record. Any particular reason you kept everything under 100 beats per minute?

It's the area that interests me the most at the moment. I find it emotional and moving at that tempo: 80 to 100 beats per minute. When I try writing anything faster than that, it just loses emotion for me. Maybe it's just a phase I'm going through [laughs].

Will the band be touring?

No, this is the first time ever that we've actually decided not to tour after finishing an album. We've toured on the back of every single album, and the last one was so long . . . we got to the end of it and were totally exhausted, mentally and physically. We had total communication breakdown problems within the band. We all hated each other. You know, that was the main reason Alan left. And so we don't want to repeat that again. We've just been in and out of the studio for 15 months, and the thought of going out on tour for a year is just too much to handle. We're considering, possibly, playing some live TV, but we're really trying to keep this year very stress-free. It's all questionable at the moment.

What's your take on the current resurgence of electronic music in the States?

We've been through quite a few electronic trends during our career, and one of the things we laugh about is the fact that it has absolutely no relevance to our record sales. Whether electronic music is in or not has no relevance to us. And I think it's because we created our own niche at a very early stage. ☐



When Tim "Bomb The Bass" Simenon signed on to produce the new Depeche Mode record, he came loaded . . . with ideas and people, that is. Dave Clayton is one of Simenon's synth men, and has a fat track-record onstage and in the studio with the likes of ABC, Bob Marley, George Michael, Take That, and U2. Needless to say, he was an obvious target for our interview microphone.

"Initially I got a demo tape from Martin [Gore]," says Clayton, of his early involvement in the *Ultra* project. "It was a pretty basic format — the essence of the songs was there — but he gave us rough pointers of where to go. So we started assembling the songs from there." Clayton and Kerry Hopwood handled keyboard and drum programming work, respectively.

Using "Barrel of a Gun" as an example, Clayton explains the process: "That one started off with a very strong melody, and the lyrics were there. He [Gore] had a little loop on the demo, a bass, a pad, and a couple of the guitar lines. It was very sparse. Even though we basically started over from scratch, we tried not to lose the essence of the demo."

Using Gore's tape as a guide, the team began rebuilding the song from the bottom up. The infectious drum pattern was "a combination of a cut-up loop," says Clayton, "just the top end of it, and single shots of bass drum, snare, and so forth. It's not a loop, *per se*. It's a pattern, but I think it has the feel of a loop."

Sequencing was done on "an old Atari with Notator. I've tried everything else, but the ST seems to have the best feel." The signature space warbles came from a combination patch made on a Waldorf Wave, and a Korg Trinity Plus and M1R. "A lot of people think it's just a preset synth," he says of the latter, "but once you get into it, there's a lot to be had."

The slippery "Barrel" bass line was recorded on a PPG Wave 2.3, but when the synth took a nose-dive a few weeks into the session, and prior to printing the keyboard parts to tape, Clayton feared the patch was lost forever. "Fortunately, I got it back, but it gave me quite a scare." Other synths exhumed from Clayton's vault for the sessions were an EMS Synthi, Oberheim Four-Voice, ARP 2600, and Roland JD-800 and Jupiter-8.

Reflecting back on the project, Clayton claims that "it wasn't just like another keyboard session for me, at all. Even though I was brought in as a session man; I was given loads of freedom. For days and days I'd sit at my rig and experiment. They gave me a few pointers, but the overall attitude was, 'Hey, do whatever the hell you feel.' So I switched the stuff on and created like mad." ☐

salute!

Solid record sales, sold-out shows, critical praise, and industry awards are all signposts of a successful band, but having a tribute record made in your honor . . . now that's something to write home about.

Add Depeche Mode to the growing list of tributees. Twice over.

Last year saw the release of *TranceMode Express 1.01*, an all-trance compilation from Hypnotic Records. Sales of that disc put a smile on the bean-counters' faces, and thus inspired *TranceMode Express II* — due in record stores this summer. If you're interested in hearing your favorite Mode tracks turned inside out and sped up to bejeezus, then put these discs on your shopping list.





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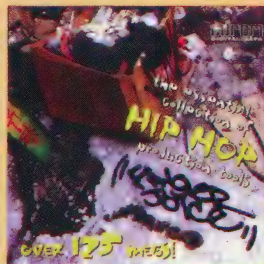
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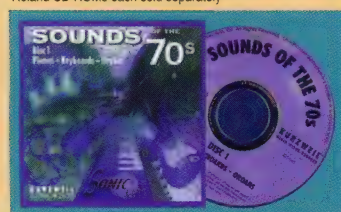
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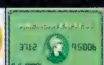
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A: Oh, about a gazillion things.

These days it seems like everyone and their brother is making PCI audio interface cards for the PC and Mac. To say the marketplace is a bit confused is like saying Times Square on New Year's Eve is kinda crowded. So how do you separate the good from the bad and the ugly? Easy. Look hard at the features, determine what's important to you, then balance that against what's going on in your pocketbook.

We'll help. Study these pages carefully. We think you'll soon see that Layla delivers the features and performance you want—at a price that's remarkably easy on your budget.

Okay. Got the picture? Obviously Layla isn't just another card, but a complete system. A system designed to help you make great-sounding music. Designed to grow as your needs grow. Designed to change the way you think about hard disk recording.

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Hook up directly to each of your console's eight busses. Transfer tracks from a tape-based digital recorder for editing. Record your band live without premixing. Layla gives you eight independent balanced analog inputs—all simultaneously accessible, all outfitted with exceptionally low-noise 20-bit A/D converters. (We even put two extra inputs on the front panel to help you capture those moments of inspiration without needing to fire up your whole rig.) And in case you were wondering: Input levels are adjustable in software from -10dBV to +4dBu.

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PLAY IT Forget about having to premix output tracks—forever. Layla features ten independent balanced analog outputs, each one boasting a superior quality DAC, for true 20-bit audio performance. And our exclusive OmniBus™ audio assignment architecture lets you easily configure the outputs as aux sends, monitor mixes, discrete track outs—you decide. Plus you can play back on all ten output channels while you're recording on all eight input channels . . . that's not just full duplex—that's octadecaplex!

EXPAND IT Now for the really big news: You can synchronize multiple Layla systems—expansion is as simple as plugging in another card and connecting the word clock output of the master unit into the word clock input of the slave. (Daisy-chain as many Layla units as you have PCI slots in your computer.) When you build a larger system you not only get more hardware ins and outs (how does 24 inputs x 30 outputs grab ya?), you get more (lots more!) DSP horsepower.

MIDI IT(!) All right. We admit that MIDI in/out/thru probably isn't the most earth-shattering feature you've ever seen (even if it is opto-isolated). But we know you'll appreciate the convenience of being able to create a simple, yet powerful audio/MIDI multitrack recording system without having to hook up a ton of additional gear (or worrying about your MIDI interface card conflicting with the IRQ on your digital I/O card, which conflicts with your SCSI card, which conflicts

SYNC IT Layla offers synchronization capabilities that make it perfectly at home in a variety of professional environments. Synchronize to picture via SMPTE/MTC. Lock to external word clock. Generate sample-accurate sync from the master clock out. (Our word clock provides continuous single-sample resolution from 5kHz to 50kHz.)

DIG IT Create a 24-bit stereo master mix to send to the digital output. (Yes, Virginia, there's stereo 24-bit digital input as well.) Or maybe an all-digital effects loop is more to your liking? Whatever the application, your precious audio tracks are handled with 24-bit precision throughout Layla's internal audio path.

—you get the picture). Did we mention that Layla is a true Plug-and-Play™ system? That's right, no jumpers to set, no IRQs to configure (in fact, only one IRQ is used for both audio and MIDI functions and no DMA channels at all are used). Setup is as simple as plugging in the card and connecting the included multi-pin cable from the card to the audio I/O unit.

EDIT IT Work with total freedom. Edit your music with the precision and flexibility that only random-access disk-based recording can provide. Layla is compatible with any audio recording/editing application that uses standard Microsoft Windows 95 calls—which means Layla works with virtually all of today's most popular programs, including Cakewalk's Cakewalk Pro Audio™, Steinberg's Cubase Audio™, Emagic's Logic Audio™, and Sonic Foundry's Sound Forge™ (to name just a few). You also get support for software plug-ins from respected manufacturers like Waves and Arboretum Systems. Don't yet own recording software? Not to worry: Layla comes complete with a custom version of Syntrellium Software's Cool Edit Pro™—a powerful multitrack audio recording and editing environment—so you can enjoy a no-hassle musical experience right out of the box. (Our Macintosh software package, which provides compatibility with a host of professional audio applications, is scheduled for release in Summer '97.)

PROCESS IT That big black square sitting in the middle of the Layla PCI interface is Motorola's latest generation DSP—the 56301, a 24-bit chip running at an astounding 80 million instructions per second. In addition to being a giant chunk of raw processing power, it's the PCI bus master, meaning that it handles all the routing of data in and around your system. That leaves your computer's CPU free to do things like drawing screens really fast. The 301 also handles audio timing information, so you get dead-on synchronization accuracy and—here's one for the engineers out there—zero-latency sample-positioning (in other words, it always knows what audio is supposed to play when and where).

ECHO IT Why does it say ECHO on the card? Simple. Our strategic partners, ECHO Corporation, are the engineering team behind Layla. ECHO has been providing audio ASICs and DSP system software and drivers to the computer industry for the last 17 years, and their designs have been sold and licensed to such industry leaders as Analog Devices™, Motorola™, Rockwell™, Sony™, S3™, and VLSI™. Why should you care? Because it's your way of knowing that the Layla hardware and software driver (the key to making Layla compatible with so many of the great Windows 95 audio applications) were designed by people who really—we mean *really*—know computer-based digital audio.

swallow

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NUTRITIONAL INFORMATION. NIACIN: VITAMIN B3. USES: INVOLVED WITH RUNNING OF NERVOUS BY THE BODY TO SYNTHESIZE SEX HORMONES. CREATES HIGH-ENERGY HAMMOND B-3 MUSIC. US
BREWER'S YEAST, WHEAT GERM, WHOLE WHEAT PRODUCTS, DESICCATED LIVER, WHEAT, AVOCADO
CONTAINING PERFORMANCES BY JOHN NOVELLO, BILLY SHEEHAN, AND DENNIS CHAMBERS.

► BY JOHN NOVELLO

When bassist Billy Sheehan asked me to collaborate on a tune for a hard rock compilation CD (*Smell the Fuzz*, Metalblade Records), I jumped at the opportunity. We asked drummer Dennis Chambers to play with us, as he is one of the best musicians I have ever had the privilege to blow with. The results were so good, and it was so much fun, that we decided to keep the project going. It evolved into Niacin, a power-trio vehicle for Dennis, Billy, and me to create raw, energetic, B-3 music. (I find that there's enough unhealthy easy-listening music around, don't you?)

Two CDs and several international tours later, we're still having a blast. For me, there's nothing like playing my B-3. I always get off on holding a chord, grabbing a handful of those sensuous drawbars, and listening to the Leslie scream from zero to 60 and back. I love playing even a simple blues riff with percussion — it sounds like the voice of God. I love doing glissandos that take your head off, configuring

MASTER CLASS





this!

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PHOTOGRAPH BY SUSAN WERNER





JOHN NOVELLO'S VITAMIN TRAVEL CASE(S)

Hammond B-3 solid-state portable w/MIDI, solid state Leslie 122HP, stock tube Leslie 122, Kurzweil PC88, two Oberheim Matrix-1000s, Yamaha TG77, Mentor MIDI interface and controller, Roland M-160 line mixer, Lexicon PCM 41, BBE 422A, Rocktron Hush IIx, Tubeworks RT 204 Blue Tube, Korg A3 Digital Effects, Carver PM 2.0t and PT 2400 power amps, two JBL MR 925 monitor speakers.

AND HIS HOME REMEDY, TOO

Yamaha C7F Grand Piano, stock Hammond B-3, MIDI Fender Rhodes, Kurzweil PC88, Roland D-50, ARP 2600, Oberheim OB-X, Chroma, Chroma Polaris, Iorio accordion, two Carver PT 2400 power amps, two Bag End TA-15 monitors, two Bag End wedges, Atari 1040ST running Cubase.

SELECTED DISCOGRAPHY/BIBLIOGRAPHY

With Niacin: *Niacin*, *Stretch/Concord Jazz*. Smell the Fuzz (compilation), Metalblade Records. *Niacin Live*, Video Arts (Japanese release only).

As a leader: Too Cool, *ITI/Spindletop Records*. On the Other Side, *Sentemo Records*.

As a side player: w/Mark Isham, Mark Isham, *Virgin Records*; w/Chick Corea, *Eye of the Beholder*, GRP; w/Al Vizutti, *Red Metal*, Bainbridge Records; w/Mr. Big, *Hey Man*, Atlantic Records.

Yamaha PianoSoft collections: What's Goin' On, For You, The Lady Sings the Blues, Here and Now.

Educational publications: The Contemporary Keyboardist, Warner Bros. Publications. The Contemporary Keyboardist Video Series (three videos), DCI Video. Stylistic Etudes, Warner Bros. Publications.



To absorb the music in this Master Class directly, spin down your Leslies and head to Keyboard Central, the official Keyboard magazine Web site, at www.keyboardmag.com. There you'll find audio files of the examples that begin on page 75.

the drawbars in new ways, and putting the pedal to the floor and bringing everybody to their knees.

Although you'd get these results with a stock B-3 and a couple of Leslie speakers, my Niacin setup is a bit hot-rodded. Bill Beer of Keyboard Products in Los Angeles (10950 Tuxford St. #24, Sun Valley, CA 91352. 818-504-9931; fax 818-504-6979) took my B-3's guts out of its wooden shell, cut the legs off, and repositioned the electronics into a more portable roadworthy configuration. Bill also replaced the tube preamp with a more dependable but still warm-sounding A028 solid-state preamp with active 2-band EQ, beefed up the percussion with active volume control, and added three spring reverbs.

He ran the direct output from the preamp so I can mix it with my two Leslies, one of which is a high-powered solid-state 122HP with 250W RMS, a JBL 2482 treble driver, and a JBL E-140 15" woofer; the other is a stock warm 122. The direct tone gives me some of that Keith Emerson/Brian Auger torque that I've always admired. I also run the direct out through a Jim Dunlop GCB-95 Crybaby wah-wah pedal and then into

B-BASICS

If you're new to the pleasures of the B, allow me to go over some basics for you. A Hammond B-3 has two 61-key manuals; the lower is called the *Great* and the upper is the *Swell*. B-3s also have a pedal board consisting of 25 keys. The preset keys are at the far left of each manual, and their colors are reversed, the white keys being black and the sharp/flat keys being white. With the *B* or *B_b* preset key engaged, the tone and volume of each manual is determined by the position of nine drawbars, of which there is one set for each of these keys. There are also two drawbars just for the pedals. [For more info on drawbar use, see *The Hammond Organ: Beauty in the B*, by Mark Vail (Miller Freeman Books) and the Nov. '91 cover story and the Dec. '96 Master Class in *Keyboard*.] Percussion is an attack transient — a *ping*, really — that you can add to the sound at the second or third harmonic on the *B* preset of the upper manual. On top of this, you have built-in vibrato and chorus vibrato of several intensities for each manual. And finally, you have control over the rotation speed of your Leslie speaker: slow, fast, or in the case of my rig, stopped (braked).

my rack effects, which include digital delay, compression, and distortion from a Korg A3. I find that when I add these effects at line level before they get to the Leslies, it gives me more control over the distortion, and saves wear and tear on the Leslie amps and speakers. Since I'm only effecting the direct out, I can get a wide range of mixes with the fat Leslie sound. I have a 3-position Leslie control that sets up slow rotation in

its center position, with fast to the right and momentary fast to the left, with a spring that returns the control to the slow position; a footswitch provides control of Leslie speed when both hands are busy. I also have effects send/return inserts for each manual, and I sometimes add chorusing, phasing, envelope followers, or delay to the entire Hammond sound.

Paul Homb from Keyboard Specialties (775 50th Ave. North, St. Petersburg, FL 33703. 813-528-1813; fax 813-526-8668) added a smoking velocity-sensitive MIDI system to both manuals, so I can control other sounds from the Hammond keyboards. Paul matched the Hammond keyboard and MIDI velocity sensors to match my playing style perfectly. I use a Mentor MIDI processor to change all the master/slave relationships of my keyboards and modules, as well as to handle program changes, MIDI volume, velocity offsets, tunings, and transpositions. But even though I have control of all my other gear right from my B-3, my most pleasurable moments are playing with the drawbars and cranking up the Leslies.

I use the following drawbar settings as a starting point, although I change them constantly as I play. On the top manual, I put the *B_b* preset drawbar settings at 88 8888 888, and the *B* preset at 88 8000 000, with 3rd percussion on and vibrato off. On the bottom manual, the *B_b* preset brings up a configuration of 00 6500 000, and the *B* preset calls up 82 8100 000, vibrato off. The pedals I keep at 80.

The *B* preset on the top manual is mainly for my lead playing, while the *B_b* preset is for chord comping and pads, and that good old-fashioned full-Hammond glue. On the bottom manual, the *B* preset is for left-hand bass in the lower register and for comping that calls for a dark timbre. The *B_b* preset is my normal left-hand setup for comping under right-hand melodies and solos.

The Hammond expression pedal has an exponential curve; as it gets closer to full volume, the volume increases more per unit of movement. Since the B-3 sound does not respond to key velocity, the expression pedal is crucial for dynamics. As I push drawbars in, I usually compensate with an increase in volume.

Equipment, though important, is secondary to writing and performing,

and that's the way it will always be. Check out Examples 1, 2, and 3 below and on pages 76 and 78, as well as their corresponding audio files on the *Keyboard* Web site to see how I apply all of this technical stuff. It's easy to catch up on equipment; it's not so easy to learn to play and write. So, grab your drawbars and ramp up your Leslies. Long live the mighty B!

HAMMOND B-3 SYMBOL KEY

UM	play on upper manual
LM	play on lower manual
LS	Leslie slow rotation
LF	Leslie fast rotation
LB	Leslie braked
P3SF	percussion 3rd harmonic, soft volume, fast decay
P2NS	percussion 2nd harmonic, normal volume, slow decay
VC3	vibrato at C3 setting
Voff	vibrato off

Ex. 1. In the introduction to "No Man's Land" from my Niacin CD, I set the drawbars to get a spooky, pure sine wave effect. This sets up the explosive Emerson-like section that begins in bar 7, where I hit the B preset to make a rapid switch to the new drawbar configuration. I also bring in a little distortion on the direct preamp sound with my effects volume pedal. The second ending is a perfect place to rev up the Leslie and bring it back down by the downbeat of bar 12 — this creates a little turmoil and glues the sections together. With a nod to Chick Corea's "Space Circus" from Hymn of the Seventh Galaxy, bar 12 kicks off with a heavy percussive setting on the top manual and a bass setting on the bottom manual. For the solo that begins in bar 18, I keep the same drawbar setting but change the percussion from normal to soft, as I want less "ping."

Moderately

UM Em D/E A/E D/E A7/E D/E A/E Cmaj7 Bm7

1 80 0000 008

♩ = 120

Em7 38 8863 000

7

ff

UM

LS

1. 2. Am7/D 88 8620 000 P3NF

10

gliss.

LF

LS

LM 82 8000 000

13

3x

D7sus4 P3SF

E7sus4/D solo

16

etc.

Ex. 2. This is the organ cadenza from "Three Feet Back," also from the Niacin CD. I love playing in this gospelly, rubato style. This intro was inspired by Lee Michael's intro to "Stormy Monday" (Lee Michaels Collection, Rhino), which still blows me away. For that dirty tone, I bring up the direct preamp organ and mix in distortion with my effects volume pedal, and add some digital delay. If I was kicking bass pedals, I would actually play the bass part on the pedals and comp on the bottom manual. But since this band has a smoking bass player, less is more. In bar 27, my left hand jumps up to the top manual and I gradually pull all the drawbars out to maximum volume in bar 35, where it's time to go to church.

[illegible]

19 G/D F13

22 E7

25 Am7 G/B C

28 Am7 G/B C

30

32 Am7 G/B Cadd9 C#dim7 Am7/D Ab13#11 D7#9b13

MASTER CLASS

Ex. 3. This tune, "Niacin," is the one that actually launched the band. For the first 24 bars, I use my B_b preset, though I constantly tweak the drawbars on the fly. In bar 25, I switch to the B preset for a darker percussive sound. In bar 32, I turn the vibrato off, and I gradually pull out the upper drawbars, rev the Leslie up and down, and add vibrato as the tune builds. In bar 43, I use the B preset again, but set the percussion to P3NF (see key, page 75). Here I take a Clavinét-style approach to interact with Billy and Dennis. Then it's back to the top of the tune and to the coda in bar 48, where I grab a chord, crank the reverb, play with the drawbars, and turn the old B-3 off. Then I gradually push the volume pedal to the floor and let nature take its course.

♩ = 142

UM Am7 D/A Am7 D/A

1 88 8841 015 VC3

gliss. LF LS LF LS gliss.

5 C D Am F

88 8741 000 88 8841 015

gliss. LF LS LF LS LF LS

10 G Am D7 G/D

88 8883 127

LF LS LF LM

14 D G/D D7 G/D D G/D D7 G/D

18 D E7#9b13 Am

88 8852 000

gliss. LF LS UM LF LS

22

Bm/A C/A D/A Am

88 8520 000 P3NF

26

33

to Coda D Esus4 F6/9 G7sus4 Asus2 Esus4 Fmaj9 G13sus4 Asus2

88 8864 228 VC3

6x

UM

LF LS LF

37

Esus4 F6/9 G13sus4 Asus2 Am9 E

bass solo

LS LF LS ff

44

C#m7

LS

8vb.

47

4x

gliss. gliss.

D.C. al Coda

Coda Am11

gliss.

Turn organ off, hold chord, play with drawbars, push volume.

Philippe Saisse Plays the New Yamaha AN1x.



As composer, producer and studio musician, Philippe Saisse is in demand by the who's who of the music industry. He's recorded with Tina Turner, David Bowie, the B-52's, Gato Barbieri, Luther Vandross, the Rolling Stones, David Sanborn, Billy Joel, etc. etc. etc. (Not to mention his own solo albums). When he plays



*Philippe Saisse's
"NeXT Voyage" available
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didn't have to be an engineer to make music; the AN1x is intuitive—just grab a knob and it does something."

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Mick Jagger
Al Jarreau
Billy Joel
Grace Jones
Chaka Khan
Sandy Lam
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Banco de Gaia

H E A V E N

BY JONATHAN MILLER

Conspiracy theorists may well have found a link between Banco de Gaia and the pyramid builders of Atlantis, Cydonia, and Antarctica. But who, or what, on Earth is Banco de Gaia anyway? According to the official Web site: "Banco de Gaia is the title of a short opera by Puccini about a retired soldier who decides to set up his own bank. It wasn't very successful because people found the long sections about different types of paper somewhat boring and uninspiring. It's a little-known fact that Puccini really wanted to be an accountant and only got into writing music because he couldn't do long division." Mmm. Forgive me if I remain just a little skeptical here, for had you gone Net surfing in search of the truth several months ago, the same source would have stated Banco de Gaia was the *nom de plume* of deceased Italian fascist dictator Benito Mussolini's gay lover! Perhaps the site's title screen provides us with a clearer insight after all: "Welcome to the Banco de Gaia Web site. Here you can find video clips, rare tracks, photos, and all sorts of information somehow connected to Banco. Be warned: Not everything you read is true."

Banco de Gaia turns out to be the recording pseudonym of leading British ambient techno-meister Toby Marks. Toby hails from the same stable as Ozric Tentacles' offshoot Eat Static (featured in *Keyboard*, Jan. '96), with whom he has toured the U.K. And while Toby has perfected his own distinctive style over a similar recording lifespan, comparisons between him and Static are inevitable. Not least among the similarities are the esoteric liner references to unexplained phenomena. The aforementioned pyramid builders are credited on *Maya*, *Last Train to Lhasa*, and *Live at Glastonbury* — his three critically acclaimed releases to date, available in the U.S. on the Mammoth label. "I'm desperately trying to



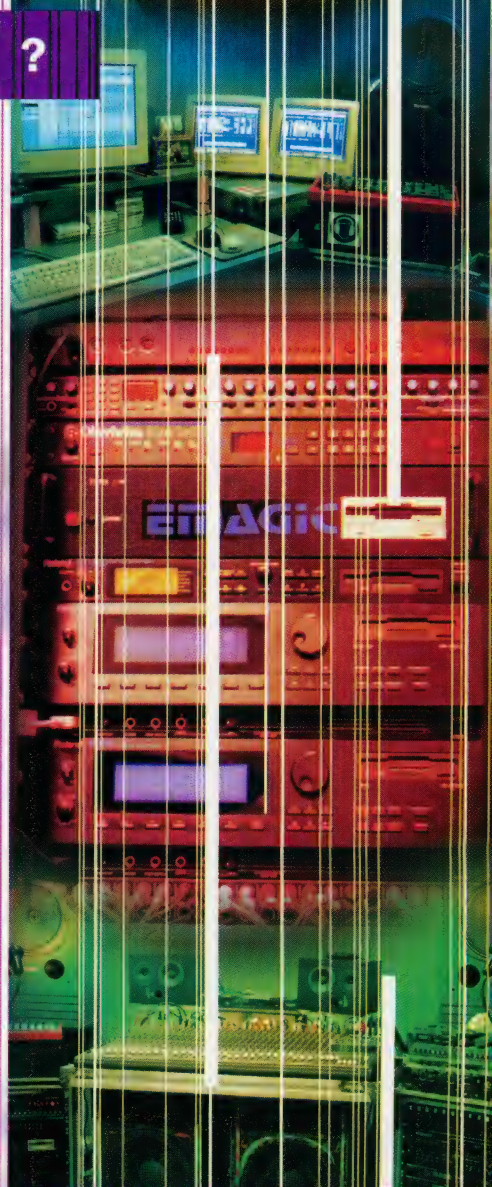
think of some more pyramid builders to credit on the new album, because I've run out now!"

From the facts so far, it is possible to deduce that travel is an important source of inspiration for Banco's intriguingly danceable soundscapes — rich, layered, diverse works utilizing Far Eastern and African chants. Further proof can be found on his fourth, as-yet-untitled album recorded at World Bank, his private studio in the historic county of Warwickshire.

"I guess I've been exposed to all sorts of music I wouldn't have heard sitting at home, although living in this country these days you do get to hear unusual things. The first time I went to Egypt was amazing. I was out there for three months and every day I was hearing prayer calls, radios in taxis, or whatever. It must have sunk in, although I've never tried to study or analyze it particularly. It just became part of my experience of music, so when I'm writing I

live in, although, of course, according to one theory, I did choose to live here. So here I am."

That said, no doubt Toby would be first to admit that without the arsenal of exotic electronica at his fingertips today, his music *modus operandi* would be severely impaired. "At the moment, apart from the Nord Lead, which I consider to be an analog synth anyway, I don't use digital synths. That's not to say I wouldn't. It's just I don't have one that I like using or like the sound of, so the samplers do most of the work. Alongside them, I've got the Novation BassStation rack, the Oberheim Matrix-1000, and a [Roland] Jupiter-8, all of which tend to get used on most tunes. A lot of the arpeggios and lead lines are created using the analogs, then percussion, basses, effects, some pad sounds, and strings are generally sampled. Live, the samplers are doing almost everything. I don't take the Jupiter onstage anymore, so I sample its sounds instead."



O N E A R T H ?

might decide to use a particular scale instead of a traditional Western one.

Of course, no self-respecting techno outfit would be complete without its healthy share of samples, and Banco de Gaia is no exception. Akai samplers are traditionally the mainstay of most European musicians, yet Toby has a penchant for Roland samplers — an S-750 and S-770, each filled with 18Mb RAM and attached to a video monitor for editing purposes, plus an S-760, generously expanded to 32Mb. It's probably safe to assume these have become the backbone of the Banco sound. Toby concurs: "They're lovely to work with. You've got a proper screen and a mouse for editing, so you don't [break] your back leaning over to work with a poxy little screen. That's why I'm using the S-760 more as a play-back machine. Akai and Roland samplers both process sound in different ways and, whereas the Rolands warm things up, Akais tend to make things sound precise, like an engineering tool."

A former philosophy student, Toby isn't simply jumping onto a world music bandwagon — plundering foreign parts for the sake of it. "Gaia is a Greek Earth Goddess," he explains, "and some years back this guy called James Lovelock came up with the Gaia Hypothesis: The Earth itself is one living organism. So unless we treat it with some respect, we'll destroy it. I have this opportunity to communicate with people and I thought it would be nice to do something constructive with an album sleeve, rather than just using it for personal advertising. There's loads of things I'm interested in and I'm lucky I can put them up on my Web site, like the face on Mars. It's nothing to do with music and not relevant in any way, except as an influence at some deep level. I hate politics, but there's more to life than going out and getting drunk. Things like ancient civilizations, other cultures, and other spiritual systems are fascinating to me. That's why I find the world such an interesting place, but not our present-day society so such. I think we've lost a lot along the way, and of all the societies throughout history, this is one I'd almost certainly not choose to

And America's reaction? "Overall it's been really good — the West Coast especially. The East Coast is more like being in Europe. The music scene here [in Europe] is all very classified and pigeonholed. In Germany, for example, I've tried very hard to make a go of it, but I don't really play techno, and I don't play some people's very narrow definition of ambient. So there's no gigs or interest because no one knows what it is. No one's prepared to try something they haven't tried before. Whereas in the States, this whole electronic music thing is all new, so people don't distinguish between me, the Prodigy, or Higher Intelligence Agency. We're all new electronic 'dancy' acts, and it's exciting. People like what they like and don't care if something's got a 909 kick drum or sounds like it's got a real drummer playing. That, to me, is so refreshing, because as time goes by I'm feeling less and less part of any scene. In America, it's the gap between the scenes that people are looking for."

Banco de Gaia is planning a return visit to the States later this year. Those who catch him in concert are in for a rare treat. Toby knows how to work an audience into a frenzy. There's not a backing tape in sight, and his mind-blowing light show rivals Pink Floyd's, although admittedly on a smaller scale. Yet he feels there is still room for improvement. "At the moment, I'm thinking in terms of getting some people onstage with me for more live interaction. I want to change the whole visual presentation in general to incorporate film, video, and dancers. I'd like to make it more like Pink Floyd's *The Wall*, and get away from strobes and smoke machines. I want to make the show more of a concept, rather than just a series of tunes one after another. My God, I'm beginning to sound like Rick Wakeman here!"

Toby's love of all things "Floydian" dates back to his youth. He's even roped in saxophonist Dick Parry — famed for his exemplary work on "Money" and "Us and Them" from the groundbreaking *Dark Side of the Moon* album — into performing on the forthcoming Banco platter. Call it Floyd for the next millennium. ■



For additional online excitement, tap into the Banco Web site at <http://www.obsolete.com/banco/>.



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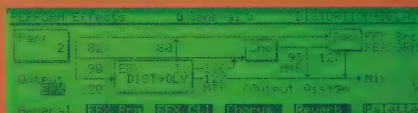
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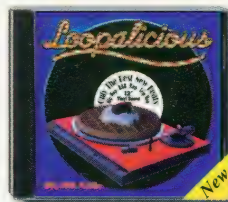
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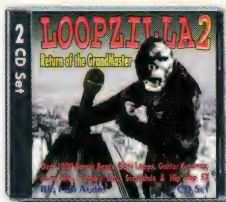
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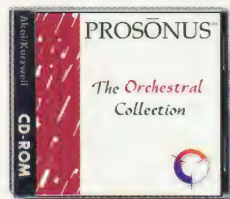
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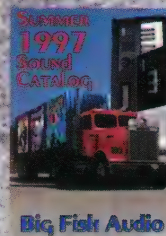
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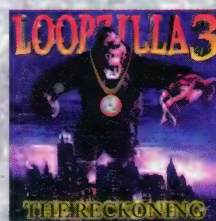


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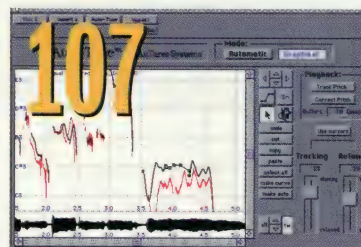
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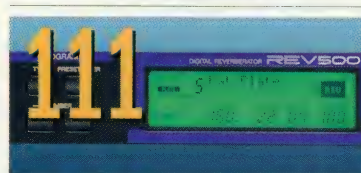
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E-mu Planet Phatt & Orbit V2

SAMPLE-PLAYBACK SYNTH MODULES

By Greg Rule



Hip-hop, trip-hop, and acid jazz sounds are what you'll find packed into E-mu's new Planet Phatt module. Imagine a crackly LP loop, a classic wah-wah guitar riff, a funky clav, a gritty organ, a horn section blast, and a diva's purr all coming from one skinny rack module. There are plenty of whistle-clean waveforms lurking in Phatt's ROM bank, but fear not . . . there are just as many gritty, grimy scum-samples onboard for you lo-fi lovers. Planet Phatt has a sparse front panel, but the big ol' rubber knob and a logical user interface add up to major ease of use. The back panel offers six audio outputs (configurable as three stereo pairs or one stereo pair and four effects send/returns), a standard three-prong AC input, and MIDI in, out, and thru.

Put your hands in the air and say "hallelujah." It seems the flood of cookie-cutter workstation synthesizers has thinned to a trickle. Keyboards are getting cool again, and they have funky names and looks to prove it. Witness the lovely red Clavia Nord Lead, sleek blue Roland JP-8000 and Yamaha CS1x, knob-laden Rave-O-Lution 309 from Quasimidi, and silver Korg Prophecy. For the rack, let's give a hearty round of applause to E-mu for their Orbit and Planet Phatt modules, decked out

in hi-gloss bronze and purple front-panels respectively. Woohoo!

Planet Phatt and Orbit are descendants from E-mu's popular Proteus line, but these slick boxes are equipped with several notable additions: new waveforms, tempo-controlled LFOs, a sequence playback utility called Beats Mode, and resonant filters (simplified versions of E-mu's Morpheus filters, and the same kind found in the company's E4 sampler). More on all these features below. ▶

Greg "Bonehead" Rule wrenched the E-mu modules during this review. You'll hear his all-Orbit and -Phatt rendition of "I Will Survive" on Trance Disco Inferno (Hypnotic Records), due to hit stores sometime this summer.



Techno, trance, and industrial sounds aplenty. From electro drums and buzzsaw synth basses to filter-swept pads and groaning sound effects — Orbit can crank out an impressive load of electronica. Owners of the original Orbit can upgrade to a V2 unit for \$100 (see "At a Glance," page 89, for details).

PROS & CONS

PROS

Easy to use. Cool, fun sounds. Resonant filters. Internal or MIDI tempo control of LFOs, drum beats, and note retrigger function. Percussion pattern generator. Solid construction. Great looks.

CONS

Closed architecture (can't import new samples). Unphatt polyphony. Not the fastest MIDI response time on the planet. No onboard effects processor.

BOTTOM LINE

Planet Phatt and Orbit are a breeze to use, and loaded with expressive, stylized sounds. And love that companion Launch Pad.

Just for the record, I reviewed Orbit version 2, which is similar to the original Orbit, but with an expanded lineup of sounds and beats. (See "At A Glance" for upgrade pricing and info.)

Since Orbit and Phatt share the same operating system, I'll touch on that first, and then get into their sounds.

Quick Tour

Turn down the volume knobs and you'll find that Orbit and Planet Phatt function identically. Good thing, because this is one of the easiest operating systems I've navigated on a synth module. A 2-line backlit LCD, one big data knob, and a few strategically placed buttons are all you get (unless you're using the companion Launch Pad, see sidebar below). In this case, the sparse layout doesn't complicate things. Without so much as a peek at the manual, I was up and running in no time. The abbreviations are clear, the method of jumping from menu to menu is straightforward, and prefixes are written into all factory patch names. A three-letter header describes what type of sound it is: gtr, bas, org, syn, pad, vox, sfx, prc, hit, and so on.

Both modules are 16-part multitimbral, so you can assign one patch to each of the available 16 MIDI channels. Unused channels can be switched off. Patches are housed in five banks — 128 patches per bank — which adds up to 640 patches (384 ROM, 256

RAM). A typical patch name might look something like "0353bas:RuberRez" (patch 35, bank 3, bass prefix, and patch name, respectively).

Orbit and Phatt might be super simple to operate, but they're surprisingly deep in the editing department. A patch can consist of a single sound (called the Primary sound), or a layer of two sounds (Primary and Secondary). There are 400-plus waveform sources to choose from in each synth, including ten multi-instrument drum kits. (See "Waveforms," page 91.) Furthermore, a patch can be linked to as many as three other patches, making it possible to create a 1-note sound that can fire up to eight layers. Timber! (For a rundown of the patch and global editing parameters, see "Patchwork," right; for a list of filter types, see "At A Glance" also at right.)

There are no effects processors in either module, but you can pull off a few cool "virtual" effects with such features as chorus (a detuned layer that uses extra voices), extreme filters (such as the gnarly, noise-inducing Bottom Feeder), and dual LFOs. A basic echo algorithm would have been nice, especially on Orbit, but I didn't miss the effects too much, considering how "animated" some of these sounds are.

While E-mu did a great job with the user interface, it's still not much fun to program complex patches on a 2-line LCD, so . . . computer users take note: According

LAUNCH PAD

E-mu's add-on Launch Pad is a true one-of-a-kind doodad. Designed as a companion controller for Orbit and Phatt — or any MIDI device, for that matter — it puts the cool sliders, knobs, and buttons missing from most modules right under your fingertips. It's also slickly designed and, well, just a heckuvalotta fun to use.

Just over 12" wide, Launch Pad sports five programmable sliders, a spring-loaded wheel, a one-octave mini keyboard (velocity-sensitive), six transport controls, nine control buttons, E-mu's "thumby button" (a momentary switch), and knobs for MIDI channel, octave, and transpose. About the only thing missing is a ribbon. On the backside are an on/off switch, MIDI in and out, a wall-wart power supply input, and jacks for a footswitch and footpedal.

The closest thing to a Launch Pad we've seen is Peavey's PC 1600 MIDI slider box, but it's more of a MIDI mixer design compared to Launch Pad's diverse array of controllers. To the PC 1600's credit, it can save dozens of patches, has some deep MIDI features, and is a bit less expensive. Launch Pad, on the other hand, is a one-patch-only machine. That patch is retained after power-down, but when you save a new front-panel setting, it will overwrite the old one. If you want to save a Launch Pad patch for future recall, you'll need to offload the data to a sys-ex filer.

During the course of this review, E-mu product marketing manager Sean Wilhelmsen dropped by to show us some Launch Pad performance techniques. Boy, does he know how to work that little black panel. With only an Orbit and Phatt connected to the Pad, Sean put on a smokin' one-man show. Like a DJ working his turntables and mixer, he fired off a stream of Orbit and Phatt beats, while simultaneously juggling filter sweeps on the faders, scratching effects on the wheel, and rave-approved bass lines on the mini-keyboard. One Launch Pad coupled to an Orbit (and/or Phatt) is a powerful core system, to be sure. And, best of all, it can all fit in a briefcase.





E-mu's Launch Pad MIDI controller puts an array of programmable sliders, buttons, and knobs under your fingertips. There's even a spring-loaded wheel for pitchbends, scratch effects, and the like. Launch Pad is a great companion for Planet Phatt and Orbit, but it could get just as friendly with any MIDI device. The one-octave mini-keyboard isn't exactly a luxury liner, but it is velocity-sensitive. Directly above the keys are transport controls for driving a MIDI sequencer — complete with stop, start, record, fast-forward, rewind, and return-to-zero buttons. Launch Pad only has enough RAM to hold one patch (retained after power-down), but you can save your custom setups offsite via a MIDI sys-ex filer for future recall.

to E-mu, graphic editing software for Phatt and Orbit is on the way from MOTU and Emagic. If you can't wait, you'll find that existing editors for E-mu's Vintage Keys module (see Keyboard Report, May '93) will get you most of the way there, since Vintage Keys is the most

closely related module to Orbit and Phatt.

Loops (Not Loops)

They aren't loops, *per se*, but the beats programmed into Orbit and Phatt are dope in their own right, and you

PATCHWORK

What bells and whistles did E-mu cram into Orbit and Phatt's patch editing menus? Dialing through the patch-level editing menu, you'll find the following functions (many of which apply to both voice layers): patch name (12 characters), key range, tuning (coarse and fine), volume, pan, amplitude envelope (DAHDSR), sound start (within sample), reverse, mono mode (two types), portamento rate, chorus (uses extra voices), cross-switch and -fade (direction, balance, amount, and point), filter (17 types, resonant), auxiliary envelope (5-stage), LFO (nine shapes, amount, rate, delay, variation), pitchbend range, pressure amount, controller amount, velocity curve, keyboard center, keyboard tuning (five preset, one user), mix output (six audio outs), and link (to three other patches).

Modulation sources include velocity, pitch wheel, MIDI controllers (4), mono and poly aftertouch, LFOs (2), envelope generators (3), and footswitches (3). Up to six of 42 possible destinations can be programmed per patch. Destinations include pitch, volume, envelope (attack, decay, release), LFO (amount, rate), filter (resonance, frequency), portamento rate, sample start, crossfade, pan, and more.

But wait, we're not done yet. Orbit and Phatt also have a Master editing menu, where global controls such as master tune, transpose, bend range, velocity curve, MIDI mode, patch mapping, viewing angle, master tempo, and the like can be found.

AT A GLANCE

DESCRIPTION

Sample-playback synth modules.

MAIN FEATURES

Sample-playback synthesis engine. 16-bit samples at 39kHz (see Waveforms sidebar, page 91). 32-voice polyphony. 16-part multitimbral. 384 ROM and 256 RAM patches. (Patch and global editing parameters are listed in Patchwork sidebar below.) Resonant filters with choice of 2-, 4-, and 6-pole lowpass, 2nd and 4th order high-pass, 2nd and 4th order band-pass, parametric EQ, two comb filters, bat-phaser (phase-shifter with peaks and notches), flanger, vocal ah-ay-ee and oh-ah, and Bottom Feeder (low-frequency distortion). 100 pre-programmed patterns with adjustable tempo and instrumentation in Beats mode. 28 song locations with ten events in each.

INTERFACING

Six 1/4" audio outputs (configurable as three stereo pairs or one stereo pair and four effects send/returns). Stereo headphone output. MIDI in, out, thru. Three-prong AC input jack.

DIMENSIONS

1.75" H x 19" W x 8.5" D; 1U rack-mount. 7 lbs.

SUGGESTED RETAIL PRICES

Phatt and Orbit: \$1,095 each. Launch Pad: \$489. (Owners of the original Orbit can upgrade to V2 for \$100. The upgrade is a basic chip swap, but E-mu recommends it be performed at a service center.)

CONTACT

E-mu Systems, P.O. Box 660015, Scotts Valley, CA 95067; 408-438-1921; fax 408-438-7854. Web: www.mw3.com/emu.

Here are other dance music synthesizers that have been reviewed in *Keyboard*:

Clavia Nord Lead, June '95
Roland JP-8000, June '97
Yamaha CS1x, Jan. '97
Quasimidi Rave-O-Lution 309, May '97
Korg Prophecy, Jan. '96

can do some tricks with the beats that aren't possible with sampled loops. Beats mode is a pattern-playback generator that contains 100 short ROM sequences. Some patterns are designed to serve as basic drum grooves, while others are full-featured drum, bass, and synth sequences. While you can't create the patterns from scratch, you can alter their tempos and instrumentation; a fun feature called X-Factor lets you transpose on the fly. Cranking this setting up or down can produce some strange results (sometimes very cool, sometimes very useless).

If you want to edit the Beat patterns, there is one workaround: Record the beats into an external MIDI sequencer, and play back your edited versions that way.

Beats mode is also equipped with 28 "song" slots that can hold a chain of up to ten beat patterns. Not the most powerful system in terms of editing, but a fun add-on nonetheless.

Sounds

Lovers of techno, trance, industrial, and the like, Orbit might just be the workhorse you've been looking for. No garden-variety pianos

here; Orbit is loaded with very "electronic" waveforms, including classic synth snapshots (TB-303, Jupiter, Prophet, Minimoog, etc.), synth stabs, one-note chords, bubbling basses, filter-swept pads, electro drum kits, sci-fi sound effects, and so on.

As for Phatt, it shares a few similar sound-types with Orbit (deep-dish basses, analog synth samples, vinyl noise, and scratches, for example), but most of its guns are aimed at the hip-hop, trip-hop, and acid jazz camps. From old-school synths and funky guitar riffs to nasty organs and horn hits, this box has the stuff it takes to make heads bob and booties shake. It wasn't that long ago when ultra clean, high-rez samples were the name of the game, but today increasing numbers of musickers are dipping into the crackly, lo-fi well. Planet Phatt has plenty of whistle-clean sounds onboard, but it also comes loaded with lots of gritty, grimy scum-samples as well. Thank you, E-mu.

During the course of this review, both Orbit and Phatt were flung into a pair of studio sessions. With my Maggots From Mars partner in tow (Billy Gould of Faith No More), I

hauled Orbit into the studio and commenced work on the song "Gordon's Gin." Using just the Orbit, Billy and I sequenced a skeleton version of the song, starting with drums, then bass, lead, and pads. Then came the task of "bettering" the sounds. Even though we had a studio full of synths at our disposal, we ended up keeping several of the Orbit tracks: the classic lead synth voice, a bass patch, and a few percussive layers. You can hear it for yourself, if you dare, on *Trance League Express* (Hypnotic Records).

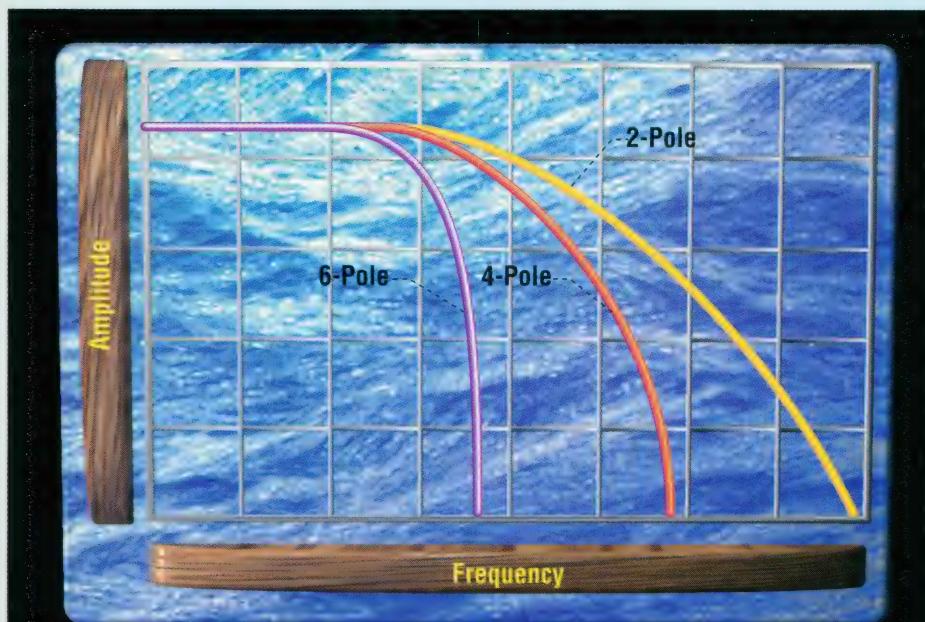
More recently, I was back in the studio solo for another Hypnotic session, and this time used both Orbit and Planet Phatt. The two modules were used exclusively, in fact, to supply the tracks. Once again, I found plenty of expressive patches to choose from: clicky synth bass, warbly chords, and highly-processed electronic drums from Orbit, plus delicious vinyl noise, lo-fi trumpets, a guitar riff, percussion effects, and a gritty bass layer from Planet Phatt. As I learned, these two modules and a sequencer *alone* are enough to churn killer dance tracks.

As for the beats in each machine, I found plenty of instant party-starters onboard both modules. Love those "slow ride" grooves in Phatt, for example, complete with dirty drums, deep bass, and groaning female vocals. But in the case of Orbit, a few of the beats are a far cry from what their names imply. The "Jungle" beats, for example, are anything but jungly (in the electronic dance music sense of the word). No big deal, really, just bad naming.

Observations

After putting Orbit and Phatt through their paces, I came away with a few notes that will hopefully save future owners some frustration. First, some of the patches are programmed with limited or fixed velocity responses. Since the response varies from patch to patch, you may find yourself wondering why certain sounds are less controllable than others. Luckily, velocity ranges can be quickly tweaked in the edit menu.

Second, both modules are based on E-mu's very successful (and now very old) Proteus technology. While improvements have been made to the new units, particularly in the filter section, the fact remains that these modules can be overdriven if you throw too much data at them too quickly (true of any synth, for that matter). In my sequencing sessions, I was usually able to get four or five tracks up and running per module with no problem, but once I exceeded that general threshold (and depending on the density of tracks), note stealing and loose timing occurred. I found myself having to nudge certain notes backwards in the



POLAR CAP

Read E-mu's ads for Orbit and Planet Phatt, and you'll notice a bit of buzz surrounding the filters. Two-pole, 4-pole, 6-pole . . . what exactly is a pole, anyway? "An important feature of a filter is the number of poles it contains," says E-mu in the owner's manuals. "The number of poles in a filter describes the steepness of its slope. The more poles, the steeper the slope, which in turn affects the sound [see diagram]. In general [and depending on the filter cutoff settings], the 2-pole filter will have a buzzy sound, while the 4-pole filter has the classic lowpass resonant filter sound. The 6-pole lowpass filters create a tight, modern sound." Specs aside, we're happy to report that the filters in Orbit and Phatt put a smile on our face, and some wicked "weoooo" in our tracks.

sequencer to get them to fire on time. So the moral of the story is, understand the limitations of your machines and work around them.

The worst thing I can say about an otherwise well-designed user interface (and this is nit-picking) is that patch scrolling doesn't wrap around. When you scroll to the highest patch (127⁴), you'll hit a brick wall, and then have to scroll all the way back to 0, and vice-versa. No worries, though, because the big rubber knob allows for super-fast scrolling, and there's also a short-cut: Hold the Enter button while you scroll and you'll fly through the banks, not the individual patches.

Verdict

Planet Phatt and Orbit are easy to use, and they're loaded with fun, highly stylized sounds. With Orbit aimed at techno, and Phatt at hip-hop (to use the terms loosely), makers of said styles will likely find a lot of relevant material to work with in each unit. [Note: E-mu recently announced another addition to the family: *Carnaval*, a 1U rack module packed with spicy salsa flavors. See last month's Frankfurt Report in the Tools of the Trade section.]

WAVEFORMS

While Planet Phatt and Orbit are loaded with cool factory sounds, plenty of editing options await those who like to tweak. You can't import your own samples, but both units do offer a wide assortment of waveforms to use as building blocks. Here's a rough breakdown. Orbit V2: sub bass (12), synth bass (45), fretless (1), misc. synth (70), organs (15), effects sounds (41), tuned hits (29), vocal effects (7), brass (8), kick drums (28), snares (44), toms (18), cymbals (47), misc. percussion (13), misc. kits (21). Planet Phatt: sub bass (12), misc. bass (18), synth bass (15), guitar (4), misc. synth (27), organs (6), Clavinet, Wuritzer, Rhodes, EP (7), brass (11), harmonica, effects sounds (13), vocal effects (5), misc. tuned hits (83), kick drums (31), snares (62), toms (10), cymbals (47), misc. percussion (88), misc. kits (10), scratches (20).

More than just preset playback synths, Orbit and Planet Phatt have a lot to offer in the editing department thanks to flexible filters, ample LFO shapes and controls, and tempo sync capabilities. Many of my favorite sounds are housed in the LFO group; fire up the Beats mode along with one of these BPM beauties, and you've got a fire-breathing monster coming at you.

E-mu also scores big points for equipping Orbit and Phatt with one of the easiest user interfaces I've seen on a \$1,000 synth module. Like the U.I. in its Proteus predecessors, this interface is clean and straightforward. And if you need additional knobs and sliders,

you can always add on the companion Launch Pad — which I highly recommend for those looking to travel light.

Weaknesses common to both modules are their closed architecture (no new samples can be imported), unphatt polyphony, average-at-best timing response, and not-exactly-rock-bottom price tags. But all things considered, there are far more positives to tip the scales in Orbit and Phatt's favor.

So would I fork over the bucks for an Orbit and Phatt? Considering my preference for electronica (from acid trance to trip-hop), you bet I would. And a Launch Pad too, please. ■

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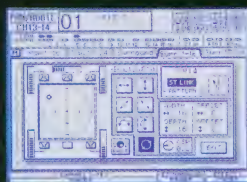


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READER SERVICE NO. 45

ELECTRO-MECHANICAL LESLIE SIMULATORS

By Mark Vail

AT A GLANCE

DESCRIPTIONS

Pro-3T: Hybrid acoustic/electronic Leslie simulator. *R3-147*: Acoustically contained rackmount hybrid mechanical/electronic Leslie simulator.

FEATURES

Pro-3T: Rotating treble horn. Built-in electronic low-rotor simulator and stereo audio output jacks. 18dB/octave crossover at 800Hz. Internal horn and low-rotor slow, fast, and acceleration speed controls. 12AX7A/7025 tube preamp. 40-watt FET power amp with .02% THD. Front-panel knobs for Pre- and Post-tube preamp levels, Contour (brightness), and Separation/Amplitude Modulation. Dual footswitch rotor control. *R3-147*: Acoustically isolated rotating treble horn. Four built-in microphones. Built-in electronic low-rotor simulator. 12dB/octave crossover at 800Hz. 12AX7A/7025 tube preamp. Front-panel knobs for Pre- and Post-tube preamp levels, Contour, Fast and Slow Speeds and Acceleration and Deceleration rates for both upper and lower rotors, Separation/Amplitude Modulation, FM level, and Cabinet closed/open for lower rotor, left and right Mic Placements, and left and right Rotor Balance. Independent switches for disabling rotation of either rotor. Stereo/mono switch for low rotor. MIDI control of fast, slow, and stop rotor speeds. Dual footswitch rotor control.

INTERFACING

Pro-3T: Line input, L and R/mono low-rotor outputs, dual footswitch input (all 1/4"). Five-pin DIN audio output connector. Standard three-pin AC power socket. *R3-147*: Two line inputs (-10 and -2dB nominal and up), effects loop in and out, speed control, and L and R outputs (all 1/4"). L and R XLR outputs. MIDI in.

DIMENSIONS

Pro-3T: 20-1/2" W x 17" D x 7" H. 25-1/2 lbs. *R3-147*: 19" W x 15-3/4" D x 7" H (4U rackspace). 22 lbs.

SUGGESTED RETAIL PRICES

Pro-3T: \$769. *R3-147*: \$1,099.

CONTACT

Motion Sound, 4426 South 450 West, Ste. G, Salt Lake City, UT 84123. 801-265-0917; fax 801-265-0978.

Associate editor Mark Vail doesn't yet own a Hammond or a Leslie, but he's written a book about them — *The Hammond Organ: Beauty in the B.*



Behind the frosted plastic on its front panel, Motion Sound's Pro-3T proudly displays its tube preamp. Riding on the Pro-3T's back is its speed-control footswitch.

Consider this story line: In the late 1930s, a guy buys a Hammond organ without a matching speaker cabinet, makes a stationary speaker system that he decides sounds like crap, then decides some kind of motion is required to improve the organ sound. That's how Don Leslie came to create the speaker system that's pivotal to the stunning B-3 sound so many of us love.

Like a Hammond organ, though, a Leslie tends to be bulky and heavy — attributes that make the touring musician's life difficult. For decades companies have tried to improve the situation by developing portable Leslie simulators — typically electronic. Then two years ago, Motion Sound unleashed the Pro-3, a small-footprint simulator incorporating a synthesized stereo bottom-rotor effect to accompany its actual spinning treble horn (see Keyboard Report, May '95). With such accuracy in its recreation of the Leslie sound, the Pro-3 virtually blew away the electronic competition. The acoustic horn was key.

Now Motion Sound has some new goodies. Like a lot of Pro-3 fans, I've been anxiously awaiting its fully enclosed rackmount spin-off, the R3-147, which has finally arrived. In addition, I've had my chance to take the new Pro-3T out for . . . er, a spin.

Survey Says . . .

Four San Francisco Bay Area B-3 players kindly visited to help me evaluate the new Motion Sounds: jazz/rock organist/synthesist and former *Keyboard* columnist Tom

PROS & CONS

PROS

Next-to-perfect rendition of the Leslie sound. Sweet distortion from overdriven tube preamp. Portable. *Pro-3T*: More user controls than the original. *R3-147*: Total variability in real time. Nearly silent acoustically. MIDI control of rotor.

CONS

No front-panel bypass on either unit. *Pro-3T*: Disassembly required to adjust rotor-speed controls.

BOTTOM LINE

When it comes to the rotating-speaker effect, there's only one better option: a real Leslie.

Coster, rock and jazz legend Merl Saunders, jazz organ phenom Chet Smith, and rock keyboardist Barry Gould.

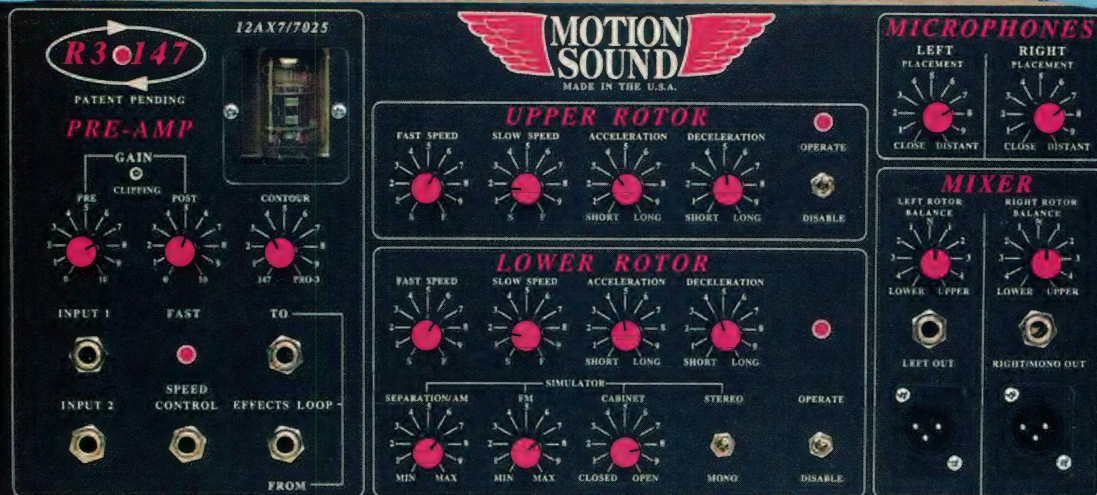
The guys gave me lots of great input about these Leslie wannabes. They also paid a few compliments to the original Pro-3, which is still available for \$675.

To truly evaluate the realism of the Motion Sound boxes, we had to have a real Leslie on hand. John Krogh, assistant editor of our sister publication *Music & Computers*, graciously loaned us his Leslie 147. Now that it's back home, he can vent his computer-music frustrations on one of his two B-3s.

"T" Stands for Tube

The Pro-3T and R3-147 share the same preamp circuitry, which is based on a 12AX7A tube. For that unmistakable and compelling distortion sound, the tube preamp can't be beat. The original Pro-3 can't match the Pro-3T when it comes to the smooth overdrive. "It really growls," associate editor Ernie Rideout testified. "For rock and R&B, this one will give you the right tone," added Gould.

Besides the 1/4" input, output, and speed-control jacks on the Pro-3T's front, around back it has what looks like a MIDI connector. A standard MIDI cable that has all five pins wired up can reportedly be used to interface the Pro-3T with the next Motion Sound product, the Low-Pro LP-120 (\$725), which is due this summer. (Motion Sound's John Fisher promises you can't hurt anything by inadvertently connecting the other end of the cable to a MIDI jack.) Weighing 58 pounds and measuring



Using all those knobs and switches on the well-endowed Motion Sound R3-147, you can customize the Leslie effect in ways previously possible only on electronic simulators. Furtively hidden inside is a horn assembly similar to that in the Pro-3T. You'll only barely hear the horn itself at full volume. Four internal mics pick up the horn sound so you can route it to your keyboard amp, P.A., or recording mixer.

20" W x 16-3/4" D x 22" H, the Low-Pro seems almost as big and heavy as a Leslie, but it will contain a real bass rotor and a 120-watt amp.

Whereas the Pro-3 has only two front-panel knobs, Volume and Limiter, the Pro-3T sports four. Output volume is now handled by two symbiotic knobs: Pre- and Post-Gain. With these, you can fine-tune the tube overdrive to get a beautiful, warm distortion — or a nasty snarl, if that's what you want. Motion Sound's documentation suggests optimal settings for all of the Pro-3T's controls.

Also new is a Contour control. Essentially a filter, Contour squelches the high end when it's

turned counterclockwise, to more faithfully simulate the treble output of a Leslie 147. Spinning the knob clockwise opens the filter until you get the same brightness spit out by the original Pro-3. Numerically speaking, Contour increases the Pro-3T's treble cutoff from 4kHz to 10kHz.

The fourth knob, labeled Separation/AM, adjusts the amplitude modulation level if you're only using one of the Pro-3T's low-rotor simulator outputs. If you use both, it determines the depth of the stereo field.

Here's another major improvement: After you remove the 15 screws and pull off the top

to get at the Pro-3T's circuit-board pots to adjust its horn and low-rotor speeds, you don't have to close it up again to audition any speed changes — although you won't hear the lid's influence on the sound of the horn until you put it back on. On the Pro-3T, the front panel is attached to the base instead of the lid as it is on the original Pro-3, which is a lot more convenient. The Pro-3T also provides an internal pot to control low-rotor acceleration, which wasn't adjustable on the original.

In summary, the Pro-3T builds on the success of its predecessor. "The sound of Pro-3T is very close to the Leslie," Saunders concludes.



If you figured you could simply plug your organ-stand-in synth directly into a Leslie with a guitar cable, figure again. Hefty multipin assemblies connect traditional Hammond organs and Leslie speakers, and special preamps are required to interface common 1/4" connectors with a Leslie. Keyboard Products [10950 Tuxford St., #24, Sun Valley, CA 91352; 818-504-9931, fax 818-504-6979] offers a solid-state preamp that's really impressive and flexible. They kindly loaned us one for our latest Motion Sound Leslie-replacement evaluation.

Several variations of the preamp are available, each housed in a small (7-1/4" W x 7" D x 3" H), sturdy stomp-box shell. The version you choose will depend mainly on the Leslie in question. If you want a single output for a specific Leslie and one switch, you'll pay \$350. A second Leslie output costs an additional \$30, and a second footswitch another \$20. Leslie cabling is optional. Onboard LEDs indicate the Leslie rotation speed (green equals fast, yellow slow, red stopped).

Two 1/4" inputs are provided, each with its own level knob. One input is always routed through the two-band EQ, the other can be switched for EQ or to bypass it.

Keyboard Products also offers the Relay Retro Board (\$140), which provides rotor braking for any Leslie 122. (Your guitar player might get a little upset trying to tune to an A played through a rotating speaker.)

"Maybe it's because I'm a purist and I use the Leslie that I say it's close. Someone who doesn't use a Leslie might say it's perfect."

It's Got the Hole Whirled

The R3-147 is unique. It contains a rotating horn, tube preamp, four built-in microphones, and realtime control of the kind of Leslie parameters that you'd expect to find only on electronic simulators. For instance, you get to set the slow and fast speeds for the upper and *lower rotors separately*, plus their acceleration and deceleration rates. Disengage either rotor for a special effect where the low overtones remain static while the upper ones swirl around like mad, or vice-versa. If you prefer MIDI control of rotation speeds, you can switch them via controller numbers 68 and 74.

"You can really customize the organ sound with the R3-147," Coster enthused, "which opens up a whole new world. With this, you can get an organ module to sound more like a B-3 and you can also bring the sound into the 21st Century, changing it from tune to tune or for particular types of music."

On the other hand, Gould thinks it's a bad idea to put so much control under the user's fingertips: "I wouldn't give people the option of adjusting the rotation speeds. If you run it too fast or too slow, it doesn't sound like a Leslie. If the average person starts fooling around with these knobs, it's going to lose the realism." John Fisher points out that the R3-147 allows the user to experiment with rotary effects beyond those of a real Leslie.

Aside from his complaint, Gould appreciates the R3-147's convenience factor. "Why go out and buy four Sennheiser 421s for miking your Leslie when you could use this and it's going to sound better? Getting the exact mic placement is very difficult. In a studio it can take almost two hours to properly mic a Leslie. Here they've done all the work for you, and you can make adjustments."

During the review process, Ernie borrowed the R3-147 for a recording project. "Even though the mic placement can be adjusted," he said, "I found the tone going to tape sounded like the Leslie had been miked too close. There's no air or reflection ambiance, and as the horn passes the mics you get more of a 'bump' in volume than a 'sweep.' I prefer some room sound around it." Fisher suggests using a spatial expander and reverb to enhance the R3-147's sonic ambiance.

"On the other hand," Ernie continued, "the left-to-right panning of the rotor is really good and quite pronounced. Runs and glissandi across the keyboard sounded like they were going across the stereo field as though there was one single continuous speaker rather than two."

Except for the MIDI connector and power-in socket, all interfacing takes place up front,

which is very convenient. Two 1/4" inputs are provided, one slightly more sensitive for weak-output instruments. Separate level controls for each input would have been convenient, but it would have required the use of solid-state circuits ahead of the tube preamp, which would degrade the overdrive sound.

While the R3-147 does a superb job of containing the sound of its horn, at first we questioned its ability to keep external sounds out. "I found the bleed-through to the internal mics to be surprisingly high," Ernie noted. "Of course, it's bound to be better than with a miked Pro-3 or Leslie, but you should plan on isolating the R3-147." According to John Fisher, the R3 is supposed to provide about 40dB of inside-to-outside isolation at optimal gain levels. However, it turns out our review unit was one of at least two shipped from the factory without an internal cover over a hole in the internal rotor carriage beneath the horn driver. Big oops! This opening permits unwanted radiation of the horn's sound through the bottom of the case while also allowing external noise at frequencies above 600Hz to penetrate and be picked up by the R3's internal mics.

When Tom Coster asked how one would bypass either the Pro-3T or R3-147, I could only point to the Gas Pedal (see above). There's no way to bypass them from their front panels. "If you're only playing an organ gig, that's no problem," Coster said. "But if you're using your synthesizer and it comes time to play something other than an organ sound, you'd have to physically re-route some cords." Fisher recommends using a common A/B footswitch for bypassing the Motion Sound processors.

Chet Smith was the only visitor I treated to a blind listening test. I started with the rackmount Motion Sound, and he was fooled. "It was very hard to tell the difference between the R3-147 and the Leslie 147," he admitted. "In my opinion, they actually sound very close."

The Real Deal

As amazing as the Motion Sound products are, there's still something special about the Leslie. "The Leslie 147 takes a little edge off synthesized organ and makes it sound more



For continuous varispeed control of and a convenient pseudo-bypass for the Pro-3, Pro-3T, or R3-147, you need Motion Sound's Gas Pedal (\$89). Two knobs allow you to set the slow and fast speed limits. Along its right side are four 1/4" jacks: one that connects to the rotary unit's Speed Control input via a 10'-long 1/4" TRS cable, another for audio input, and two serving as audio outputs. The Gas Pedal's on-board A/B footswitch alternately routes incoming audio between the two outputs, which you connect to a Pro/R3 and another destination.

like a B-3," noted Coster. "I like the nature of it, with its wood cabinet and what it does to the sound. It's tough to beat, but you have to consider hauling around something that big."

"Wood plays a very important part in the sound of many musical instruments," Saunders agreed. "The Pro-3T sounds nice, but you can hear the difference between it and a Leslie, because the latter has a big wooden cabinet." According to Fisher, all the Motion Sound products were designed to simulate the sound of an open Leslie 147. Ours was closed up during these evaluations.

Hammond players who know the organ and Leslie inside out tend to be the most critical of "improvements" on them. Those who aren't such purists appreciate the portability factor — as long as the right sound comes across. In both of those senses, the Motion Sound products deliver the goods. If your audience will hear the device itself, the Pro-3 or Pro-3T seems the better choice. Where miking would be required to fill the hall, or where you want realtime control of parameters beyond high-frequency attenuation and distortion, go the extra mile for the R3-147.

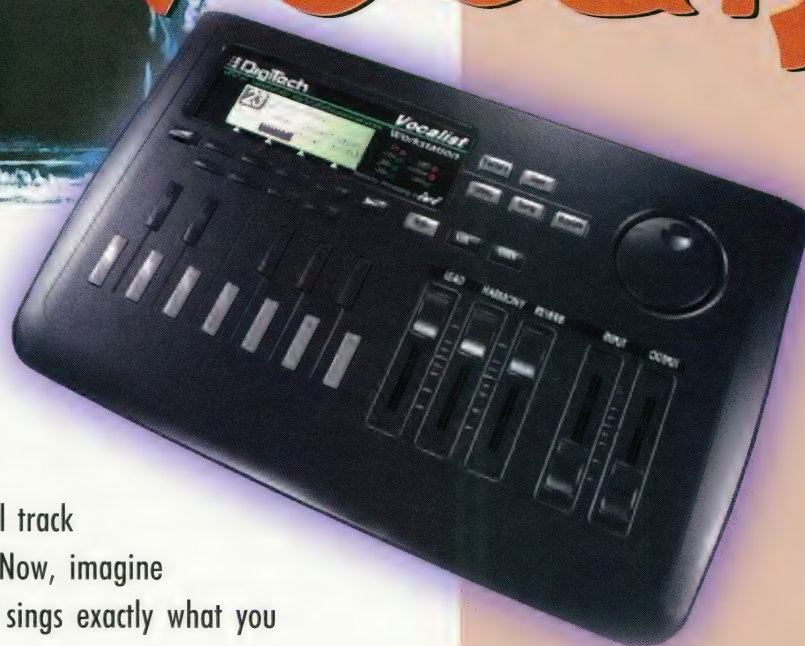
As Barry Gould summed up, "If I were using a Motion Sound onstage, I wouldn't feel like I had to apologize to anybody." ■

Create killer vocals



Jon Anderson/YES

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DESKTOP SOUND MODULE

By John Krogh



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PROS & CONS

PROS

Plenty of great sounds. Fully programmable user sounds. Computer software for sound editing. Can add XG- or GS-compatible daughterboard to increase polyphony and sound set.

CONS

No effects can be applied to incoming audio signals. Software editor doesn't provide full part editing.

BOTTOM LINE

Loads of great sounds for a very reasonable price. Great for computer multimedia/developer types and very functional for gigging keyboard players.

From the graphic designer to the computer game developer, multimedia is *the* buzzword for anyone who plugs in a computer. It's not enough anymore to have a Web page with a blinking logo, or to hear a few odd clinking noises as you pilot your star-cruiser into battle. These days, you gotta have sound effects and music. This is known as "a more fully interactive experience." But with so many different products out there for audio production, ranging from soundcards to full-blown synthesizers, purchasing the right tool for the job can be a little daunting.

Enter the NS5R AI² synthesis module from Korg. The NS5R is a 32-part multitimbral General MIDI module with 64-voice polyphony and two stereo multi-effects processors. It has a stereo RCA audio input for routing external signals through the unit to its 1/4" outputs. (Sorry, no effects can be applied to incoming signals.) There's also a software program for sound editing, a custom MIDI driver, and a built-in computer interface (Mac/Windows). You can use the module as a MIDI interface when connected to a computer via its host port.

Don't be fooled into thinking that the NS5R is just another GM module. This unit packs a whopping 1,177 sound programs, 512 combination sounds, and 31 drum programs into its half-rack width case. Unique to the NS5R is the ability to couple the module with a GS- or XG-compatible daughterboard. The NS5R comes loaded with GM, GS, and XG maps for its internal sounds. These sounds will not be affected by controller information that is part of the GS and XG specs. However, daughterboards are fully compliant with the specs, and when plugged into the module, will increase the maximum polyphony to 96 voices. A separate volume knob located on the rear panel controls the volume of an installed daughterboard. Do-it-yourselfers beware: Installation must be performed by a Korg certified technician, if you don't want to void your warranty.

The NS5R has square rubber buttons and a data entry wheel, which is a big improvement on what GM modules usually look and feel like. The wheel is a first among synths in this price range, although I'll admit it took some getting used to. The display color can switch

between orange and green depending on which of the three standard modes (GM, GS, XG) the unit is in. For example, GS could be set to green and XG to orange, letting you know at a glance which mode you're in when playing MIDI files that send format-specific information. Oh, I almost forgot the color of the box itself — computer gray. It looked right at home next to my Mac and PC.

Let Me In

Navigating in the NS5R is easily accomplished once you have an understanding of its architecture. There are a total of eight modes, including a Multi mode that allows you to configure its 32 parts for multitimbral playback. In global mode, you can set the NS5R to emulate the program, combination, and drum kit configurations of the OSR/W.

The NS5R defaults to multi mode when it's turned on (new for Korg synths). Here you'll find basic settings like MIDI channel, part assignment, pan position, effect program, and volume, as well as a second level of control called *part edit* mode. With previous Korg models, you could access only programs in a multi. In the NS5R, though, you can combine programs and combinations, as well as daughterboard sounds, all into one of four user multi locations (which you'll want to do if you have specific setups that you work with frequently).

Part edit provides greater control over the performance aspects and tonal characteristics of sounds assigned to the parts of a multi. Settings for pitchbend and modulation wheel depth, keyboard zones, and portamento (yeah!) are available, in addition to the MIDI Channel to Port settings, which allow you to set up how the NS5R routes incoming MIDI data. Port A is for the first set of 16 channels, Port B for the second set, and Port C is reserved for routing information to an external MIDI device or internal daughterboard (when installed). If you want to route MIDI data specifically to sounds in an external device, but have a daughterboard installed, you'll need to connect the device to the MIDI Thru port and mute the NS5R parts that share the same channels being used in the device. To actually achieve 32-channel playback, the module must be

John Krogh is assistant editor at Music & Computers magazine. Recently relocated from Minnesota, he currently resides in San Francisco with his Hammond B-3 organ.

AT A GLANCE

DESCRIPTION

Desktop sample-playback sound module with effects, audio inputs, and built-in computer MIDI interface.

MEMORY

12Mb waveform ROM. 1,049 programs, 384 combinations, 896 effects programs, and 37 drum kits in ROM. 128 user programs, 128 user combinations, and 128 user effects programs in RAM. Four multis can be stored in RAM. Additional ROM programs available with optional daughterboard installed.

VOICE ARCHITECTURE

Each program offers one or two oscillators, volume, transposition, fine tuning, pan, effect send 1 and 2, pitch envelope, keyboard tracking, VDF and VDA (Variable Digital Filter and Amplifier with envelopes), 3 LFOs per oscillator, lowpass filter, cutoff frequency, and "color."

FEATURES

64-voice polyphony. 37 single and 10 multieffects; two effects can be used simultaneously. 32-part multitimbral, receives on 16 MIDI channels (32 with Korg MIDI driver). Each part has settings for MIDI channel, volume, transposition, expression, pan, effect send 1 and 2, color, filter cutoff frequency, keyboard zone, velocity sensitivity, pitch-bend, modulation depth, and portamento. Stereo RCA analog audio inputs can be routed to L/R outs. Built-in serial computer connector (Mac or Windows) and MIDI interface. Sound Editor software for editing and archiving NS5R settings. GS or XG compatible daughterboard can be installed, increasing polyphony to 96 voices. Display color can change from orange to green, indicating GS, XG, or GM operation.

INTERFACING

1/4" L/mono and R out, L/R RCA stereo analog audio ins, 1/8" stereo headphone out. MIDI in, out, thru. Host serial port.

DIMENSIONS

8.6" W x 9.5" D x 1.8" H. 4.4 lbs.

SUGGESTED RETAIL PRICE

\$850.

CONTACT

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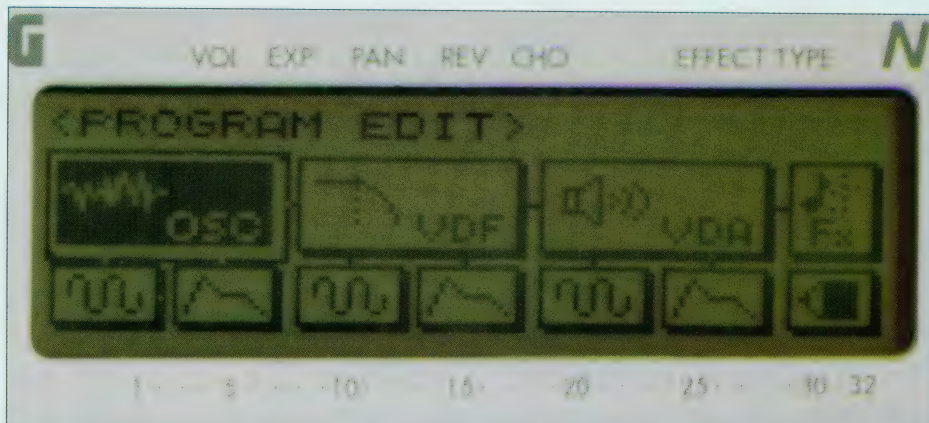


Fig. 1. The large display of this small box is quite revealing. Icons are used to guide you through different operations of the NS5R. In this case, you see the oscillator, VDF, VDA, and FX icons of Program Edit mode.

connected to the computer via its host port. For Windows, this means using the Korg MIDI driver (provided), but for the Mac, Korg says that using the [MOTU] MIDI Time Piece driver allows OMS and FreeMIDI to see the NS5R as an MTP on ports 2 and 3. (This useful bit of information is not mentioned in the manual.) If the unit isn't connected to your computer in this way (i.e., if it's just one device in a larger MIDI setup), it will function as a 16-channel multitimbral sound module. It's important to realize that it will not be limited to 16 parts, however. You can still have some incredible layering options by setting more than one of its 32 parts to the same MIDI channel. If you want to play just the sounds from a daughterboard, you can set all of the possible incoming channels to be mapped to Port C.

The Edit/Enter button is the key to accessing the deeper levels of the NS5R. It serves double duty by allowing you to enter part edit, global,

and utility modes with a simple press, while pressing and holding the button for about two seconds gets you into the program editing pages. I'm not a fan of multi-purpose buttons, due to the inevitable confusion they cause. But too many dedicated buttons can create a cluttered panel, and with all of the functionality that this box has, I'll gladly settle for buttons that consolidate multiple functions. The big square buttons and graphic display of each operation involved in the editing process more than make up for any shortcomings of the front panel (see Figure 1).

Once you're in the program edit pages, a whole world of synthesis possibilities is at your fingertips. The number of editable synthesis parameters in the NS5R is surprising when you consider that it's a "desktop" sound module. In addition to a standard ADR envelope for pitch, programs contain a lowpass filter and amplifier, each with its own LFO and envelope generator. A parameter called "color," which is akin to filter resonance, is provided; however, its effect was negligible. Keyboard tracking can affect the filter and amplifier, as well as the pitch slope, which is how the pitch relates to the location of the notes on the keyboard. I found this to be useful for creating patches that could be played more like a percussion instrument: With the pitch slope set to change very little from the low to high end of the keyboard, I could hit notes in the lower and upper registers to simulate the effect of slapping and muting the head of a drum.

Programs, as on most Korg synths since the venerable M1, come in three flavors: drum, single-oscillator, and double-oscillator. When you make changes to any of the 31 ROM drum kits in the NS5R, you're forced to save them into one of the two user drum kit locations. Since other synths treat drum kits as programs, I would have expected that a kit could be copied into any of the 128 user programs, where it could be edited and saved. Unfortunately, this is not the case; but with 31 preset and two

KEY CONCEPT

What's a Daughterboard?

Nearly every IBM-compatible computer coming off the assembly line today is equipped with some type of soundcard. If you happened to buy your PC a few years ago, then you probably bought a card and installed it yourself. For certain applications, sounds that are produced with these types of peripherals are acceptable. But for many ears, their sonic punch is too lackluster to be tolerable. What can you do? You don't want to dump the soundcard you paid dearly for and worked so hard to configure. One solution is to install a daughterboard.

These small wonders let you expand your palette of sounds immensely. Most Sound Blaster-compatible soundcards — from the lowly budget to the high-priced do-everything models — have a socket available for a daughterboard. By plugging one of these boards into, or rather, onto a Sound Blaster-compatible card, you can augment old FM synthesis technology with the world of General MIDI and/or its supersets, GS and XG. Though it's not a PC or a soundcard, the NS5R provides a socket that just about any daughterboard — whether it's XG, GS, GM, or (horrors) FM — can be plugged into. Doing so not only gives you a whole new set of sounds to play with, but also boosts the polyphony to a maximum of 96 voices. (For more on XG, GS and General MIDI formats and daughterboards, check out the September/October '96 issue of *Keyboard's* sister publication, *Music & Computers*.)

user-definable drum kits, it's likely that this won't pose a problem for most people.

Over the Top

The NS5R has the most sounds available of any synth module in its class, which simply means that it has quantity. But what about the quality, you ask? The sounds are very impressive, and because there are so many to choose from, nearly everyone will find something they'll want to use. Certain sounds have variations in *other banks*, which may be detuned, doubled at the octave, or brighter, for example. If you find a sound that's close but not exactly you're looking for, chances are you'll find a variation in another bank that's just the ticket.

To access all of the sounds in the NS5R, you can either scroll over to the Part setting in the display and dial them in with the data wheel, or send a bank change message from a sequencer or MIDI controller. Some banks contain sound effects programs: You'll find everything from running water to running horses, offering many possibilities for commercial use. A good representation of ethnic instruments and sounds is also available, including mandolin with tremolo, tribal chants, tabla, gamelan, and bouzouki, to name a few.

The NS5R shines in the area of its Program and Combination banks, which contain non-GM

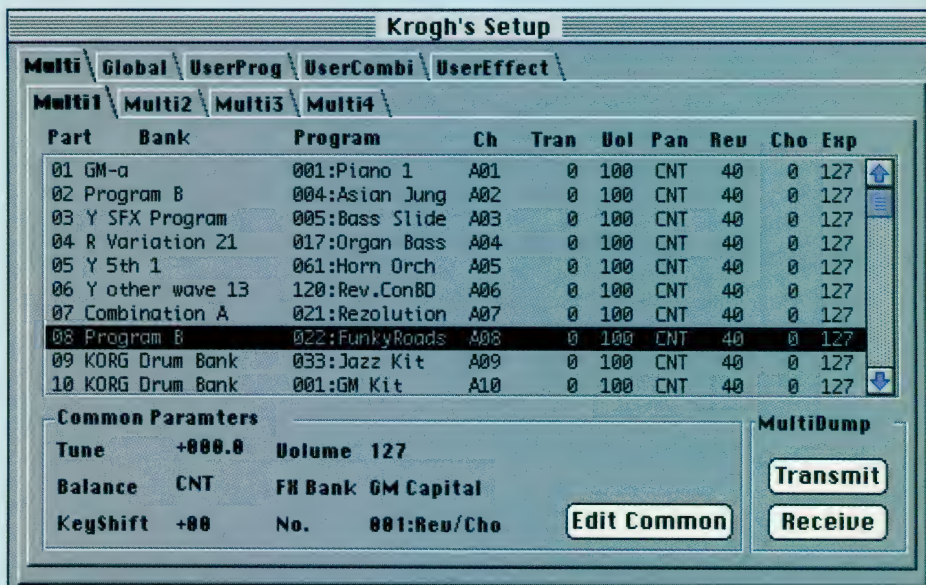


Fig. 2. This handy sound editor program comes with the NS5R. With it, you can create, edit, and store your own program, combination, multi, and effect settings. Clicking on the five tabs reveal the various levels of editing available to you.

sounds. If you've ever played a Korg synth, from the M1 up to the Trinity, you'll find some familiar favorites. There's the usual fare of strings, acoustic guitars, and synth pads, but the NS5R

also has some very nice ambient and indefinable sounds that would be useful for film scoring. However, don't be fooled into thinking that the NS5R is just for computer jockeys. There are

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plenty of sounds for the gigging keyboard player, including many electric piano and organ sounds. A good complement of Hammond organ drawbar settings is available, including a hollow Al Green-like tone that's pretty hard to come by in most synths these days. The overdriven organ sounds were a bit thin, but by using the effects section I was able to come up with a combination of distortion and Leslie speaker simulation that worked. There are several Rhodes piano sounds; however, some contain too much of the attack transient of the hammer hitting the tines. The selection of analog/techno sounds could be better, especially considering that today's popular music seems to be influenced by the retro sound of analog synths.

The string section sounds are very spacious, but there are only a few options for solo string instruments. The violin sounded more like a harmonica than a Stradivarius. The brass instruments are represented well with a combination of punchy stabs and mellow and muted tones that proved to be useful for pop and orchestral applications. There are a fair number of usable woodwind samples; however, some sounds, like the oboe/bassoon, are thin in the upper register.

The piano sound is my least favorite of all. While it does have a nice woody sound up in its higher range, it loses some presence in the low register, where an obvious sample break is

located at C3. It seemed to have a plucked attack, which would help the sound cut through in a dense mix, but might render it useless for solo applications.

Full of Effects

The NS5R sports a total of 47 different effect algorithms, including 10 multi-effects (a chorus/delay combination, for instance). A total of two effect algorithms can be employed by a multi, combination, or program. (Settings for programs are ignored when they are part of a combination or multi.) The effects section is considered a separate unit within the NS5R. In previous Korg models, effects were saved as part of a combination or program, which meant that if you created *the* reverb with parametric EQ for a piano sound and wanted to use it for a horn sound, you had to copy it from one program to the other. With the NS5R, settings like feedback amount and pre-delay time are saved with the effect program. So in the above scenario, you would simply dial in the same effect program for the horn that you used for the piano.

There are a total of four effects configurations that a sound can be routed through before it goes to the L/R outs. Because of a design flaw in the NS5R, only the fourth configuration (Parallel 3) allows you to have separate send levels per multitimbral part for

each of the two effects. The others only give you send levels for Effect 2, while Effect 1 is applied globally. For most purposes, only the Parallel 3 setting is useful. Don't rely on the manual to clue you in, though, as it provides an incorrect description of how the first three configurations work.

I was pleased with the sound of the reverbs overall, and really enjoyed the plate algorithm. You'll find the more common effects, like chorus, hall, and delay, which are all very usable. Other welcome entries include flanger and phaser effects, overdrive, and rotary speaker simulation. Unfortunately, there is limited MIDI control provided for effects in the NS5R. Velocity and aftertouch can be assigned to a number of desinations. But, for instance, the multi-tap delays can't be synced to MIDI clock, which is something techno maniacs will miss being able to do.

All Under One Roof

With the appeal that this module is sure to have for people involved with computer game developing and multimedia, it's no wonder that Korg would have a slick way to control the box from your computer. Their Sound Editor software (Mac or Windows) is included with the module and provides onscreen access to nearly all of the editing functions of the NS5R (see Figure 2, page 99). The software requires the

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module to be connected to the computer via its host port, which isn't immediately apparent in the documentation. Everything will seem to work if the module is connected by its MIDI I/O — which is typically how computer control works with MIDI instruments — but I experienced a few total crashes this way, so I wouldn't recommend this method.

Once I was up and running, having control from my computer was a real treat. For people who like to work only from their computer and not fuss with hands-on editing, using the software is the way to go. Unfortunately, the part edit mode is not available in the software, so keeping the module close by may be a necessity. Also, I experienced a problem in which certain settings weren't being updated through the entire program. For example, after saving changes to an effects program that was being used by a multi, I discovered that the changes were being saved to the effects program itself, but the multi that used it was not updated with the change. I hope a future software rev will address the problem.

And In This Corner . . .

Korg certainly isn't the first company to introduce a GM module. The closest competitor to the NS5R may be the MU80 by Yamaha, though Yamaha recently released two new modules, the MU90 and MU100. At the time of this

review I only had an MU80 for comparison; it was reviewed in the August '95 issue of *Keyboard*. So how do they stack up?

The Yamaha weighs in at a list price of \$895 and offers 64-voice polyphony with 32-part multitimbral playback. Both the MU80 and NS5R have stereo analog audio inputs, but the MU80 uses 1/4" connectors and can apply effects to the incoming signals, just as if they were another part in a multi setup. This, in itself, is a significant difference and one that people looking to squeeze a little extra out of the box will appreciate. The MU80 offers the ability to use three different effects simultaneously in comparison to the NS5R's two. The NS5R allows full user programming of sounds, while the MU80 only has part parameter editing, which is a more limited system. Both modules contain GM, XG, and GS sound maps, but the NS5R contains 426 more sounds than the MU80 and offers the ability to increase the number of sounds and polyphony by adding a GS or XG compatible daughterboard. Each comes with a built-in serial MIDI interface and driver software. The MU80 has two discrete MIDI in ports, while the NS5R only has one, but the NS5R comes with its own sound editor software. The NS5R takes up only one outlet of a power strip, while the MU80 requires a "wall-wart" AC power supply. Whew! Did you get all that?

Conclusion

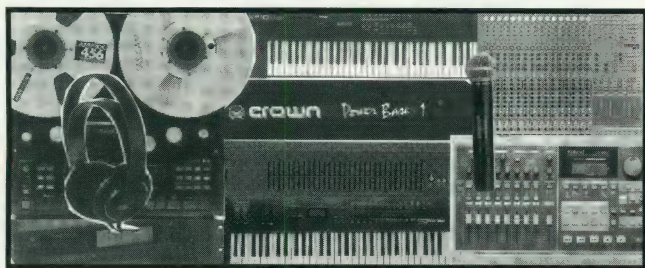
For game developers and multimedia artists, or even the non-professional who wants decent-sounding MIDI playback, the NS5R is definitely worth taking a look at. If composing jingles is your thing, it offers an inexpensive way to beef up your sonic possibilities with sound effects, pads, and ethnic or acoustic instruments at a low price. With the ability to increase the polyphony by adding a GS or XG compatible daughterboard, it becomes even more appealing. The potential buyers of this module probably won't be well versed in the secrets of sound programming, and the documentation accommodates this with easy-to-understand explanations of every synthesis parameter available in the module. The computer/module connection was a bit tricky and could use better documentation, but once it's set, you'll be pleased with how much easier it is to control the NS5R using your mouse and monitor.

It would be nice to see a few things added to the NS5R, like the ability to route the audio input signals to the effects section. And while the software was a big help with editing, the problem with parameters not being updated when I moved around the tab dialog box was frustrating.

All in all, the price is right, the number of quality sounds is impressive, and there's flexibility with the daughterboard expansion option. This little box may be the synthesizer you've been saving your pennies for. ■



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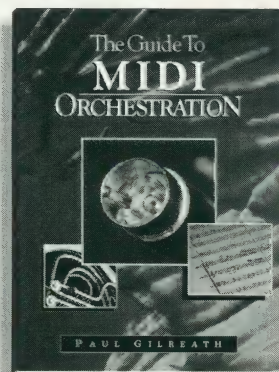
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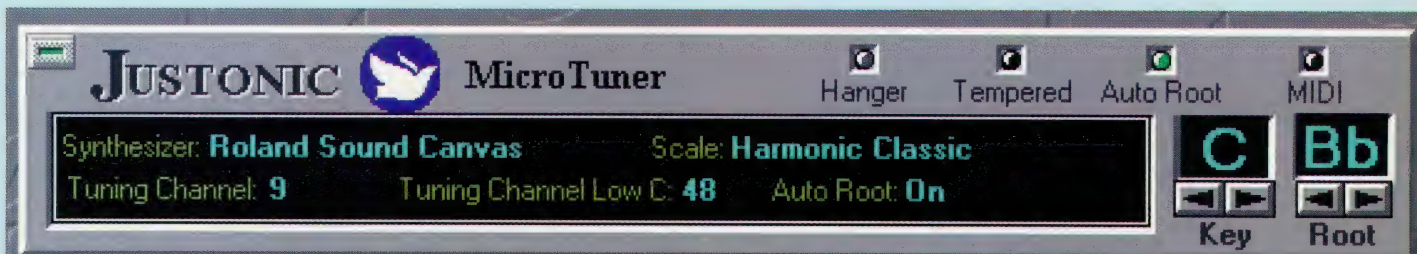


Fig. 1. Justonic's Pitch Palette software changes the tuning of your microtunable synthesizer, digital piano, or soundcard by sending system-exclusive messages. How a particular chord or interval sounds depends on the scale, key center, and chord root, which you can select from the MicroTuner shown here or in real time from your MIDI controller. Or use the Auto Root mode and the software will determine the root as you play, with remarkably good results.

AT A GLANCE

DESCRIPTION

MIDI tuning and temperament software for microtunable synths, PC (Mac avail fall '97).

SYSTEM REQUIREMENTS

PC, 486 or higher, Windows 3.1 or 95. Synthesizer, sound module, digital piano, or soundcard with micro-tuning capability. Synths supported (call for current info): E-mu Proteus series, Morpheus, MPS, MPS+, Classic Keys, Vintage Keys, Sound Engine, Wave Blaster; Ensoniq MR series; Kurzweil K2500, K2000; Roland Sound Canvas, JV-1080, E-86, XP-10, XP-50, any GS-format instrument; Yamaha MU50, MU80, CS1x, QS300, SY77, SY99, DX11, DX7II, VL1, any XG-format instrument. Soundcards supported: Turtle Beach Multisound; Roland SCC-1, SCD-15, any GS format. For demo purposes only, any 16-bit soundcard will play Justonic wave generator output of sine, sawtooth, and square waves.

FEATURES

Realtime tuning adjustment of individual pitches. Automatic or manual chord root selection. Manual or predetermined key center and scale selection. Depending on synth: tunes held notes, resolution of up to 0.01Hz. Automatic chord type detection. Calculator for converting Hertz, fractional ratios, decimal ratios, and cents. Oscilloscope simulator. Onscreen piano keyboard. Scale editor for user scales, over 50 preset scales. MIDI file player. One-octave frequency analyzer. Base pitch tunable from A=415 to 465.

COPY PROTECTION

None.

SUGGESTED RETAIL PRICES

\$199. Pitch Palette bundle with PG Music Power Tracks/Roland Virtual Sound Canvas software synth combo: \$239.

CONTACT

Justonic Tuning Inc., 1650 Alberni St., #103, Vancouver, B.C., V6G 1A6, Canada. 604-682-3456; fax 604-669-3301. Email: info@justonic.com. Web: www.justonic.com.

Most pianists and keyboardists never give intonation a second thought. We might worry about rhythm, articulation, voicings, selecting the right patch, or a host of other musical options at our disposal. But when it comes to altering pitch, the boldest move we make is generally a temporary flick of the pitchbend wheel.

There is a common level of musicianship in the European tradition, however, that includes intonation in its palette of expressive devices. The goal is quite basic: to achieve pure harmonic intervals. To oversimplify, this means two or more notes whose overtones overlap perfectly; you'll hear no beats between notes of pure intervals. To offer another generalization, pure major third and sixth intervals are smaller, and minor third and sixth intervals are larger, than with equal temperament. The end result, though, is musical, not scientific: intervals and harmonies that sound richer, more resonant, and clear.

This is the world of just intonation, and it is for this application primarily that Justonic has introduced Pitch Palette. The program is not complex; it takes MIDI input, analyzes it, adds tuning information in the form of system-exclusive data, and sends it out to your microtunable sound source. Yes, it works in real time, although the actual response depends on your synthesizer.

The folks at Justonic have also recognized that the bulk of the world's music has nothing to do with equal temperament. The program therefore has a fairly high degree of programmability, as well as an introductory library of Arabic, Indian, and Indonesian scales. So gather 'round, you traditionalists, musical multi-culturalists, and harmonic explorers, and let's listen closely to Pitch Palette.

Tune Up

Since Pitch Palette makes no sound by itself, your first concern will be to find a synthesizer, digital piano, sound module, or soundcard that is microtunable, which means one that is tunable at the level of individual

PROS & CONS

PROS

Quick, flexible, realtime tuning response, dependent on synth. Wide range of historical and ethnic preset scales. Tunes by key center, auto-detected chord root, or manual chord root. Visual feedback of intonation.

CONS

Only 12 user-selectable notes per octave per scale. Does not work simultaneously with other MIDI programs. Incomplete or extended voicings tuned poorly.

BOTTOM LINE

A wonderfully helpful tool for tuning justly and exploring the world of tuning flexibility.



notes, not merely the overall pitch of the instrument. It's best to get one that Justonic already supports, since the appropriate system-exclusive configuration will be in place; setting up your system in this case involves nothing more than selecting your synth from a pull-down menu. See the At A Glance box at left for a list of currently supported instruments.

Pitch Palette can tune with a resolution of 0.01Hz (.04 cent), which is that specified in the MIDI Tuning Standard (MTS); few synths currently support the MTS, and many can't deal with anything smaller than one cent. Other aspects of Pitch Palette's performance are dependent on the tuning abilities of your synth as well, such as whether notes can be tuned while they're being held, and whether the synth can receive individual sys-ex messages as opposed to slower MIDI dumps. For this review, I used a Roland SC-88VL Sound Canvas, with its built-in MIDI interface connected to the PC via the serial port.

Once you've procured your synth, got your MIDI interface, and performed your Windows MIDI driver dance, you can pretty much just start playing. The sound you hear depends on the currently selected scale, key center, and chord root, which you'll see in the MicroTuner window (Figure 1). If your synth has a piano sound selected, you may be in for a surprise: a C major triad in just intonation can sound pretty foreign on a piano patch. You can toggle back to equal temperament to compare the tuning systems. Pitch Palette lets you participate in the intonation process in one of three ways: You can select the roots and keys in the MicroTuner window with the mouse, let Pitch Palette automatically sense the root of the chord you're playing and adjust pitch accordingly, or select the roots or keys manually from your MIDI controller.

The first method is fine for playing music that was written for non-adjustable keyboard tuning systems other than equal temperament, as much of the literature from the Renaissance and Baroque eras was.

Auto Root, the second method, gets you into the realm of what goes on in good ensemble playing. Pitch Palette's chord recognition is pretty darn good up through 7th chords, and the decisions the program

Associate editor Ernie Rideout takes his intonation seriously, when performing with the Philharmonia Baroque Orchestra on original instruments and when playing music from a variety of the world's music cultures.

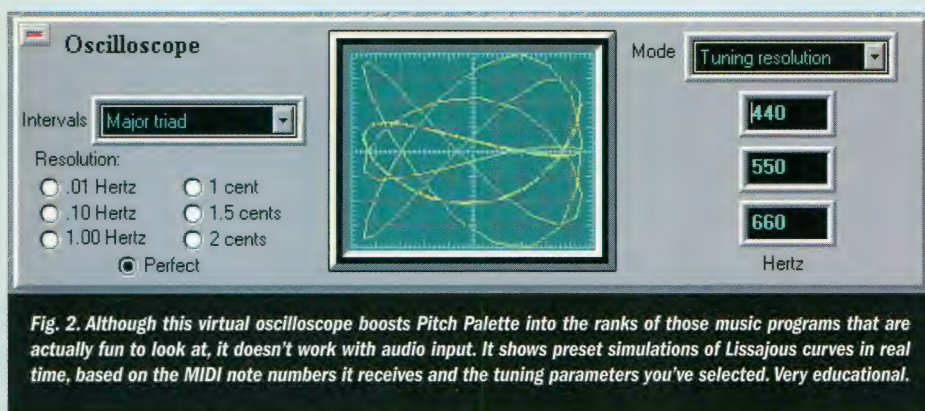


Fig. 2. Although this virtual oscilloscope boosts Pitch Palette into the ranks of those music programs that are actually fun to look at, it doesn't work with audio input. It shows preset simulations of Lissajous curves in real time, based on the MIDI note numbers it receives and the tuning parameters you've selected. Very educational.

makes about how notes function in chords are consistently accurate. When modulating from the key of C, for example, it knows the difference between the high A_b of an *F* minor triad and the lower $G\sharp$ of an *E* major triad. Playing around the Circle of Fifths with triads or dominant 7ths yields perfectly tuned harmonies. Major triads resonate, minor triads exude angst, fifths ring like bells, and dominant 7ths sound like they're about to collapse upon the tonic. Talk about color.

For you jazzers, I found that unaltered root-position 9th and 11th chords sounded good, but that incomplete voicings (missing the root or fifth) did not. Obviously a rootless chord is open to a variety of interpretations, but I was surprised to find that omitting the 5th resulted in such ambiguity as well. Altered extensions such as $\sharp 9$ and $\flat 13$ chords had a bit more color than I'd like, at least on bebop tunes that modulate often. My ear liked them over static harmonies.

One performance pitfall lies in the fact that in Auto Root mode, Pitch Palette tunes according to the currently held intervals. This means that if you hold a note too long from a previous chord, even if it doesn't sound, the program may tune it differently with unpleasant results. I found this to be the case especially with rhythmic jazz comping. If you do have a particular inversion or voicing that you'd like interpreted in a certain way, however, you can teach it to the program in the Chord Detector window.

The third tuning method lets you determine individual chord roots, which of course may differ from Pitch Palette's analysis. For example, a *Dm7* chord sounds very different if its root is specified as *F* rather than *D*, which it certainly may be if it's functioning as a subdominant in C. This is the mode I'd recommend for jazz.

To choose roots, keys, or scales on the fly, you can select an octave on your controller, the note-on messages from which are subsequently blocked from your synth. This info can be sent on a separate MIDI channel as well. You can have two such "tuning channel" octaves on your keyboard: one silent octave that determines the key center (or chord root — one or the other, not both) corresponding to the key you press, and another that selects

among the first 12 scales in the scale library. You could also send this tuning channel information with a MIDI foot controller. Yes, this involves a bit of non-musical thought as you play, but it is fairly handy.

Turn 'Em On

So there you are, grooving on this new world of sound that's opened up to you. Now what? Well, you could use Pitch Palette to demonstrate just intonation to other musicians, perhaps helping a choir or young chamber ensemble get a feel for how to get those major thirds really in tune. You have a couple of cool tools to help educate your ears and those of your protégés.

The coolest by far is the Lissajous curve oscilloscope simulator (Figure 2). Okay, it's not a real oscilloscope; it doesn't respond to audio, it only plays animations in real time that correspond to the MIDI notes you play (Justonic reports that a real-time audio version will be included in a future update). But it performs quickly and realistically, and it behaves like a Lissajous curve oscilloscope would, plotting the first note it "hears" on the x-axis, and the second and third along the y-axis; this multi-tone display is distinct from the more commonly seen single-tone that displays a single waveform. Pure intervals yield a graph that looks like smooth sculpture, and equal-tempered ones look like scribbles. There is a tuning resolution mode that demonstrates the effect of coarse and fine tuning resolutions.

For any scale you select, the Scale Editor's bar graph compares those intervals with equal temperament. This is also the window in which you enter your own scales in the form of ratios; you can't just type in the cents or Hertz. Justonic reports that in the next update, you'll be able to create new scales just by dragging the bars in the graph.

Justonic has provided a most elegant tool to help you figure your harmonic ratios, simply called the Calculator. If you're really into alternate tunings, this feature may be worth the price of the program by itself. With the Calculator, it is finally possible to sit down with books such as Harry Partch's *Genesis of a Music* (Da Capo) or Scott Wilkinson's *Tuning In*

(Hal Leonard), type in the scale you want, and hear the results.

As long as your scale has 12 notes per octave, that is, the maximum that the Scale Editor accepts. Granted, these 12 can be almost anywhere on the tonal map, and with the just tuning adjustments there are some 150 tones available in a virtual array. This in effect achieves what some quarter-tone scales set out to do, but there's no way for the user to determine the pitch of the "in-between" notes. You could theoretically get a 43-note scale by programming several scales to cover portions of your tonal territory and switching between them on the fly — but what a pain. The manual, while it is generously packed with interesting and useful information, could stand to have some sort of tutorial to help folks accomplish this feat. How else am I going to play with the Wendy Carlos alpha, beta, and gamma scales? According to Justonic, version 2 will accommodate any number of tones per scale.

A few other neat features: The onscreen piano keyboard can serve in an educational capacity in lieu of a MIDI keyboard. The frequency analyzer displays the pitch in Hertz of a predetermined octave of the selected scale. The MIDI file player does what you'd think, and it even lets you insert tuning events (key, root, scale) into the file. It'd be nice if this were an actual sequencer, so you could use Pitch Palette as a compositional tool, but no. You can't even edit events in the MIDI file.

Conclusions

Pitch Palette is a wonderful introductory application of a very promising technology. With the right instrument, the program can really help you expand your ears (and those of others). It works remarkably well, and I can recommend it highly for all music educators, performers who want to really get into historical and ethnic tunings, and all musicians who could benefit from improved aural acuity.

I don't think the program is quite ready to leave the class or practice room yet, however. The realtime controls are a bit too cumbersome to be really liberating in performance; perhaps you'll feel differently if you use a MIDI foot controller for data input instead of sacrificing part of your keyboard. Pitch Palette doesn't work simultaneously with other MIDI programs, making sequencing and recording difficult. The 12 notes-per-octave limitation takes a lot of the adventure out of the program.

That being said, it's great that Pitch Palette is here. Synthesizer manufacturers should stop assuming that since few musicians know about the finer points of intonation, they don't need to implement adequate microtuning. It should be a standard feature on all keyboards and sound modules. I hope that Justonic can make their own synth module into a reality (that goes for the Mac version of Pitch Palette, too). They indicate that both may be available later this fall — not a moment too soon. ■

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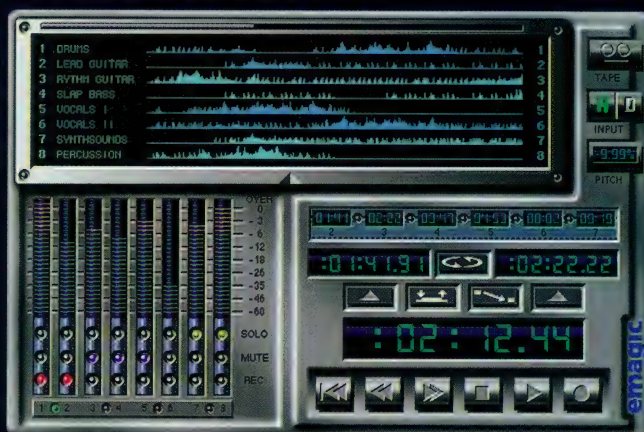
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INTONATION CORRECTING PLUG-IN (TDM, VST)

By Adam Green

PROS & CONS

PROS

Shines in its ability to tune passages without sounding forced. Easy-to-use automatic correction. Powerful graphical section.

CONS

Mix automation not yet implemented in TDM version. Graphical section requires track bounces for each corrected section.

BOTTOM LINE

A marvelous tool for Pro Tools III or Cubase VST users who are serious about correcting intonation problems in vocals or other solo instruments.

AT A GLANCE

DESCRIPTION

TDM and VST plug-in for correction of intonation on monophonic source material.

FEATURES

Automatic pitch detection and correction. Select major, minor, chromatic, or 26 microtonal and historical scales to control output tonality. Disable specific scale pitches from being corrected. Detune scale to any pitch center. Different speed settings allow you to leave in and take out vibrato, or create it manually with depth, rate, and delay settings. Graphical mode shows sound envelope and detected pitch, allowing user to draw in a target pitch.

SYSTEM REQUIREMENTS

TDM: Any NuBus or PCI PowerMac running a Digidesign Pro Tools III system. One available DSP Farm card (Auto-Tune needs one chip). Pro Tools software version 3.0 or higher. **VST:** Any Mac PowerPC running Steinberg Cubase VST software.

COPY PROTECTION

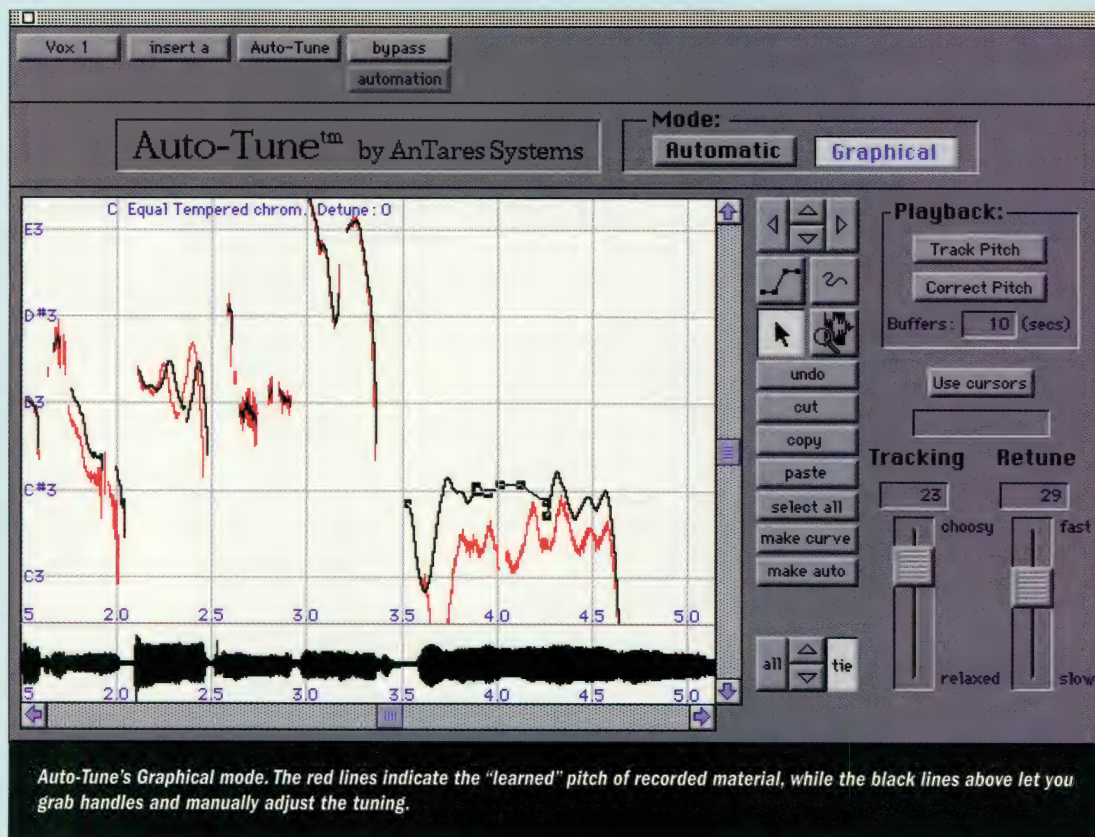
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SUGGESTED RETAIL PRICES

TDM \$599, VST \$399.

CONTACT

AnTares, P.O. Box 697, Applegate, CA 95703. 916-878-6666; fax 916-878-8577. Email: andy@antares-systems.com. Web: www.antares-systems.com. Sales and distribution: Richard & Company. 800-446-2356. Web: www.richard.com/web.



Remember the days when you had just finished comping a series of vocal takes and realized that some of the phrases needed a little tuning help? You probably took out your trusty sampler or harmonizer, captured the problematic words or phrases, and, using the pitch wheel in conjunction with your favorite sequencer, attempted to force the vocals into shape. You say you're still doing it that way? There's no need to if you have Auto-Tune by AnTares Systems. Auto-Tune is the first plug-in that has the ability to correct intonation problems for out-of-tune vocals or instruments in real time.

Although Auto-Tune does this by varying pitch up or down, it is not a pitch-shifting plug-in in the traditional sense. In fact, Auto-Tune changes the pitch of tracks in small increments, usually no more than 30-80 cents. The way it works is simple—at least on the surface. Pitch is measured by analyzing repeating cycles of audio. This measured pitch is continuously compared to a user-controlled scale. The output pitch is adjusted to be more in tune with the scale note.

I tested the TDM version of Auto-Tune. The basic hardware necessary to run it is a Digidesign Pro Tools III core system, at least one free DSP chip (there are four per DSP Farm card), and of course, some out-of-tune source material. Auto-Tune is also currently available as a VST (Steinberg Virtual Studio Technology) plug-in for anyone running Cubase VST on a Mac. The user interface is practically identical on both TDM and VST platforms.

According to Andy Hildebrand, Ph.D. at AnTares, Auto-Tune uses a special algorithm designed for intonation

correction. Rather than use the usual FFT (Fast Fourier Transform) algorithms used in other pitch-shifting plug-ins, Auto-Tune computes pitch changes in much the same way that samplers change the pitch of samples. One limitation of Auto-Tune, however, is that it works only on monophonic (single notes at a time) solo instruments. That rules out processing multiple instruments or group vocals; you'll also need to forget about tuning up that string section or piano performance.

Installation

If you're already familiar with plug-ins, then Auto-Tune shouldn't present any installation problems. The software, which consists of the program itself along with several tutorial files, comes on two standard 3.5" disks. Like many plug-ins, it puts a software "key" on your hard drive. The documentation is clear and concise, and also contains a reference section dealing with pitch as well as a tutorial for use with material provided on the second disk. Installing Auto-Tune on my Macintosh PowerPC was straightforward. A few minutes later, I was on my way to tuning heaven.

Tune-O-Matic

As you might expect, operating Auto-Tune is a snap. (After all, isn't that why it's called Auto-Tune?) The program has two modes of operation, Automatic and Graphical. Each one has its own way of adjusting the amount of tuning attempted by the plug-in.

In Automatic mode (see Figure 1, page 108), the pitch of the incoming signal is continually tracked and

Adam Green is a freelance sound designer, editor, and mixer in Los Angeles. He works on television and film projects, as well as albums for major recording artists who would, most likely, rather not have it known that their vocals have been tuned.

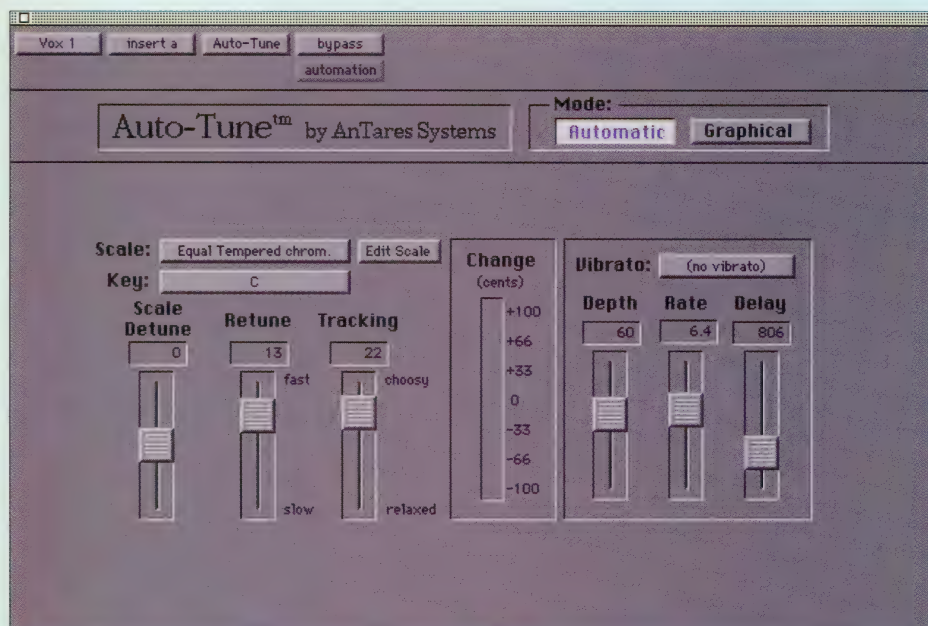


Fig. 1. Auto-Tune's Automatic mode requires only a few parameter settings before it will correct tuning in real time.

compared to a user-defined scale and key, then corrected in real time. If you don't feel like spending the time to massage each problematic phrase manually, then this is your mode. You have the ability to choose from a wide variety of scales, including equal-tempered major and minor scales, along with many historical, ethnic, and microtonal tunings. You can also edit the currently selected scale. So, for example, if a bass passage was recorded and a handful of notes always had correct intonation, you could tell Auto-Tune to leave those notes alone and correct only the remaining ones. The two main parameters in this mode are controlled by the Retune and Tracking sliders. The Retune slider controls how fast (much like an attack parameter) the pitch adjustment is

made, and the Tracking slider controls how much variation the incoming waveform is allowed before it will be corrected.

Also included in the Automatic mode is the ability to re-introduce vibrato. This could be necessary since — depending on how sensitive your Retune and Tracking parameters are set — Auto-Tune might automatically remove any vibrato in the input sound, thinking it was out of tune. There are several editable parameters in the vibrato section, including depth, rate, and delay of the vibrato, as well as the style of pitch variation (sine, ramp, or square waves).

In addition to the Key and Scale settings in this window, you'll also find global scale detuning, and a graphic showing the amount pitch is being changed (measured in cents: 100

cents = 1 semitone). I found myself using the Automatic mode as a way of centering the pitches around a given key before switching to the more advanced Graphical mode. For vocal tuning, I got the best results by switching the Retune slider to 23 and the Tracking slider to 22. Be careful, though: A value set too low or too high in the Tracking slider will produce squeaking and faulty pitch correction, since the pitch of some vocal expressions is hard to track. This is caused by the fact that although we may perceive the pitch of certain words, Auto-Tune has trouble determining the pitch of non-repetitious waveforms, such as consonants or yells.

Graphical Mode

Once you've come across a phrase or two that the Automatic mode can't handle with finesse, it's time to take out the big guns and switch to Graphical mode (see title screenshot, page 107). Learning to operate the graphical side of Auto-Tune takes a little more patience, as the process is different than merely setting two or three parameters and letting the audio play through.

You must first select (in Pro Tools or Cubase) the portion of audio to be corrected. The maximum length of the selection depends upon the number entered into the "buffer" entry in Auto-Tune. For the TDM version, the memory is allocated in DAE (Digidesign Audio Engine), so if you want to correct long sections of material, DAE's memory must first be increased. I had no problem capturing over 100 seconds of material. However, as you will learn, it's not practical to work with more than five or ten seconds at a time.

After you've selected a short section of material, hit the Track Pitch button. Auto-Tune is now ready to "learn" the pitches of the selected material. Don't forget to select a portion of audio in the edit window, and remember to play from a specific point. If you forget, Auto-Tune will continue to track the source material until the buffer is full (luckily, Auto-Tune's buffer defaults to ten seconds).

Auto-Tune displays the pitch of the learned material graphically, with time on the horizontal axis and higher and lower pitches on the vertical axis. Click on the Make Curve button and a new target pitch line will be drawn on top of the learned pitch curve. This is where the fun begins. Using the four main tools (line tool, curve tool, pointer tool, and zoom/selector tool) you can manipulate the curve representing the target pitch until a desired sound is achieved. There's a grid representing key and detune value in the pitch graph that is used only as a guide, and doesn't affect the computations performed in graphical mode. Auditioning audio is performed by simply hitting the space bar in Pro Tools. Changes can be made easily and then auditioned again.

There is one caveat to the Graphical mode, however, mentioned as a warning in the manual

BETTER (A LITTLE) LATE THAN NEVER

One characteristic of a digital audio mixer such as TDM (Time Division Multiplexing, the Pro Tools III mixing bus), is the inherent delay caused by digital signal processing. Tracks are normally delayed in minuscule amounts — typically 3-20 samples (less than one millisecond) when passing through the TDM mixer. Because all of the tracks are usually delayed by the same amount this is not significant — or, if it becomes a problem, it can easily be compensated for.

When used, DSP plug-ins can cause much more delay in the signal path, typically on order of 30 to 1,500 samples (about one to 34 milliseconds). This can cause phasing as well as stereo imaging problems if only one side of a stereo pair is processed.

During my evaluation, I tried to test the delay caused by Auto-Tune, but was defeated. Each time I ran the tests I ended up with different numbers. This, it turns out, is because the delay imparted by Auto-Tune varies as the pitch of the source material changes.

Auto-Tune needs at least two repetitious cycles of source material to determine its pitch. And, since two cycles of lower-pitched material take longer to process than two cycles of higher-pitched material, it makes sense that Auto-Tune would impart a variable delay to its output. Regardless, in subjective listening, I didn't find the latency of Auto-Tune TDM's output to be out-of-the-ordinary or objectionable — especially for the kind of solo material that it will probably be used on. Antares says that the delay on the VST version is about the same.

no less than three times: Since TDM and VST plug-ins don't know the absolute time of audio, it's imperative that you always play back the audio starting at the same point where it was "learned" by Auto-Tune. In other words, after drawing a corrected target pitch curve, don't go into the Pro Tools or Cubase edit window and change the point of playback. This will cause the plug-in to process the currently selected audio with the (unmatched) target pitch function. Needless to say, this does *not* sound pleasant.

Does this really affect the way you'll work with Auto-Tune? Well, yes. After learning the recorded tuning and creating a target pitch for some audio, it's necessary to do a bounce onto another track. Since you always have to start playing back material from the same point, it doesn't make sense to learn more than approximately ten seconds worth of audio before you bounce. It becomes irritating to listen to the first nine seconds when all you want is to correct the *last* second or two. In my tests, I obtained the best results by "learning" no more than a phrase at a time (usually less than six seconds). I would recommend highlighting the phrase you want to correct, then separating the region. This way, if you accidentally change the position of the cursor in the edit window, it's easy to recall the old

position by clicking on that region and switching back to Auto-Tune.

One other point to bring out: Auto-Tune does not have the ability to process stereo pairs. If you like recording solo instruments in stereo, you'll have to process each side separately. It's not too difficult to do this in TDM and VST environments, but it would be great to see some type of "left-key-right" feature in a future version.

I applaud the graphical side of Auto-Tune. I easily corrected a series of falling vocals (the pitch dropped off at the end of the phrase) by highlighting the offending word, analyzing the pitch, raising the target pitch, and bouncing it back to disk. Auto-Tune also worked like a champ on the other solo source material I used: male and female vocals, sax, etc.

One problem I ran into a number of times is that I would accidentally move the target pitch curve to the left or right, when I only wanted to move it up or down. Currently, there is no command in the TDM version to constrain the target pitch graph vertically or horizontally so that it remains fixed over the original source material. However, Hildebrand says that this capability will be included in a future TDM update, and is already available in the VST version. I was also used to having the Tracking slider located to the right of the Retune slider in Automatic mode. The position of the sliders

are switched in Graphical mode (a mistake that might be corrected in a future update).

Conclusions

In all the years I've been doing pitch-correction sessions for major recording artists, I've never come across an intonation tool as good as Auto-Tune — compared to doing it the old-fashioned way, it's the easiest solution by far. I would like to see some changes made in the next update, however. For starters, I feel the graphical side of Auto-Tune would be better suited as an AudioSuite plug-in. AudioSuite offers many features, including the ability to run on non-TDM systems, bouncing in place, and better management of bounced file names and regions. It would also be nice to have the ability to pitch-shift the entire contents of a track up or down by a fixed amount without setting the key and tuning parameters. (Auto-Tune's algorithm is very clean when shifting in small amounts, so this would be a great feature.) While plug-in automation is available in the VST version, it was not yet implemented in the TDM version I tested.

Let's put things into perspective: Auto-Tune saves time in the studio, and adds an impressive amount of processing power to a Pro Tools III or Cubase VST setup. If you're producing tracks that include vocal solos or similar material, this program is worth serious consideration. ■

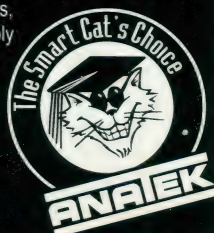
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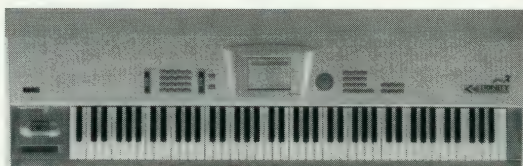
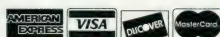


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By Marvin Sanders



Fig. 1. Yamaha's REV500 puts great reverb under your fingertips at a hands-on price. To the right of its LCD are four knobs that are permanently assigned to pre-delay, reverb time, hi-ratio, and early reflection level. The main screen always shows the values for these parameters along with the currently selected algorithm, plus bank, preset/user number and program title, and global stereo/mono setting.

AT A GLANCE

DESCRIPTION

Stereo digital reverb unit.

MEMORY

Hall, Room, Plate, and Special banks, each with 25 preset and 25 user programs.

FEATURES

20-bit A/D/A converters, 44.1kHz sample rate, 32-bit internal processing. Ten algorithms: reverb>gate, reverb>reverb, reverb>dynamic filter, reverb>chorus, reverb>chorus, reverb>flanger, reverb>symphonic, reverb>tremolo, echo>reverb. Knobs for pre-delay, reverb time, hi-ratio, early reflection level, and effect level. Real-time MIDI control of most effect parameters. Audition button triggers snare or rimshot sample for adjusting effects. Four-stage LED input meters. Program change mapping. Footswitch for effect mute or program increment. Large, backlit LCD display.

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CONTACT

Yamaha Corp. of America, 6600 Orangethorpe Ave., Buena Park, CA 90620. 714-522-9011; fax 714-739-2680. Web: www.yamaha.com.

like messing around with 37,000 effect parameters as much as the next guy, but sometimes all I want is some really good reverb. No muss, no fuss. I also wouldn't mind having an additional high-quality processor handy for that instrumental solo, percussion, or rhythm guitar track I might otherwise have to print "wet." But I'm not made of money. I want it good *and* cheap.

If you feel the same way, then you might be looking for Yamaha's REV500 — a \$499 single rackspace you-get-what-you-see box that focuses on halls, rooms, and plates, but that also offers some nice bonus algorithms.

Early Reflections

The REV500 gives good interface. Its back panel offers balanced XLR and 1/4" stereo inputs and outputs which can be separately set to -10 or +4dB operation with hardware switches. There's a 1/4" footswitch jack assignable to either effect mute or program increment. And MIDI in and software-selectable out/thru jacks are included to facilitate realtime control of most effect parameters, and to back up your data with sys-ex bulk dumps.

You'll find a single Input Level knob on the front, next to four-stage LED meters that top out on red for clipping. Although the REV500 is a true stereo unit, you can't set levels separately for the left and right channels. Considering the price of the box this isn't a huge deal, but you might have to concoct a workaround in certain situations. If you're using only one input, you can toggle from Stereo to Mono mode in software.

There are four banks of programs — Hall, Room, Plate, and Special — each with 25 preset and 25 user locations. Switch between banks with the Type button, and select programs with the Preset/User and Number (-/+) buttons. Conveniently, the scrolling "wraps around" in either direction, and pressing one Number button while holding the other changes values super-fast. If you'd rather send

PROS & CONS

PROS

Sounds smooth and professional. True stereo operation. Straightforward interface. Dedicated knobs for commonly adjusted parameters. Audition button.

CONS

No front-panel bypass switch. Can't adjust left and right input levels separately.

BOTTOM LINE

The right quality and features at the right price. A good choice if you're in the market for a dedicated reverb unit.

program changes, there's a map to route incoming numbers to any of the 200 programs in the machine.

Show Me the Reverb

Yamaha's new DSP engine with 32-bit processing — the same one used in their higher-end ProR3 sold for \$1,299 — is at the heart of the REV500's sound. There are ten algorithms to choose from, and all but the first are combination effects (see the At A Glance box at left). This variety means that even though the unit is designed primarily as a dedicated reverb that offers one algorithm at a time, it's actually quite a flexible studio tool.

The reverb is excellent — very smooth and uniform, with absolutely no grittiness even on long tails. Yamaha took just the right approach to "voicing" the unit, giving it a middle-of-the-road vibe that makes it easy to plug into any situation. At the beginning of each bank are small, medium, and large versions of the chosen effect type, as well as other standard jumping-off points (church settings for halls, garage and "live" for rooms, vocal plates, etc.).

The hall presets range from airy auditoriums to huge arenas, and are the strongest part of the REV500's effects lineup — they seem to be most germane to the character of the reverb algorithm. The Room bank offers a nice assortment of favorites, and produces a meaty enough result for rock and roll drums, if that's your thing. The plates seem a bit lackluster by comparison to the other types — not dense and rich enough for my taste — though they're still good utility programs.

At the end of the Hall, Room, and Plate banks you'll find variations that utilize some of the combi algorithms to introduce gates, chorusing, flanging, and other specialty effects, which can also be found in abundance in the REV500's Special bank.

The Special bank offers some programs that really start to crank up that bang for the buck factor. There's lots of flanging, resonance and dynamic

Keyboard technical editor Marvin Sanders has never fixed a bad track by washing it with beautiful reverb. Really — he swears.

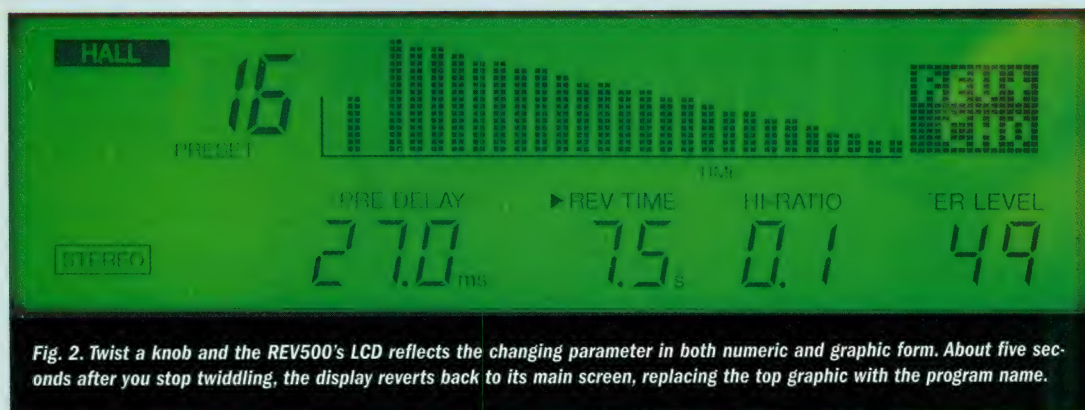


Fig. 2. Twist a knob and the REV500's LCD reflects the changing parameter in both numeric and graphic form. About five seconds after you stop twiddling, the display reverts back to its main screen, replacing the top graphic with the program name.

filtering (filter parameters change according to input level), stereo tremolo (effect pans between speakers), techno-ready gates, and even some basic echo (up to 300ms, achieved by feeding the pre-delay block back into itself).

All of the combi algorithms offer reverb, and all but one are in serial configurations: rev>flanger, echo>reverb, reverb>tremolo, etc. Reverb+chorus is the only parallel structure, and it conveniently allows you to adjust the balance between the two effects (so you could use just chorus if desired). In general, these specialty effects are happening, and add a lot to the appeal of the REV500. The flanger in particular can be cranked into wild contortions.

I also had a lot of fun controlling specific parameters with MIDI continuous controllers (which you can't set yourself — they're pre-assigned at the factory). However, the unit switched into its Store mode and stopped allowing parameter changes when I sent it much more than three controllers at a time. Yamaha suggested a workaround: If you're sending four controllers or more, separate them by at least 58ms. Of course, this applies only to individual messages, as you wouldn't want to go in and tweak four continuous *streams* of controllers to see whether messages among the four streams are too close to each other.

Knob It

The REV500 has four knobs that are hard-assigned to what Yamaha feels — and I agree — are the most commonly adjusted reverb parameters: pre-delay (0-200ms), reverb time (300ms to 99 seconds), hi-ratio (length that the high-frequency component of the effect lasts proportional to the overall reverb time) and early reflection level. You'll always see the numeric settings for these parameters along the bottom of the super-bright and readable LCD (see Figure 1, page 111). You can grab a knob to adjust its setting and the screen will show a pleasant,

though not terribly informative, graphic that represents your changes (see Figure 2).

The four parameters mentioned above are available for all programs, but you can also edit various other parameters in software. Also for all programs you get lo-ratio, diffusion, highpass filter, and lowpass filter. Then we get into parameters specific to each algorithm. The first two knobs double as a cursor control and value dial when in Utility mode, which is where algorithm-specific edits are made.

The REV500 is definitely not a tweaker's dream, but it does provide basic controls where required. For instance, the reverb algorithm also offers density, liveness, and early reflection delay settings. The reverb>flanger algorithm allows you to control the speed, depth, and feedback level of the flanger. The reverb>tremolo algorithm gives you speed and depth of the tremolo effect, as well as the phase difference between left and right channels, and even a setting for the modulation waveform (sine, triangle, or square). You get the idea. . . .

There is no way to change the currently selected algorithm, so you'll have to start with a program that uses the one you want to work with. Another tiny gripe with the editing: When you've made a program and set its new name, you can't press Store to save it directly from the naming screen. Instead, you have to exit out of Utility and then save.

The ER Level knob doubles as the master effect level knob when the EFF Level switch is pressed, and there's a global setting in software that allows you to set the unit for effect only or to mix in direct signal. Unfortunately, there is no front-panel bypass switch to mute the effects — you *must* use a footswitch. This is the only major flaw in an otherwise well-considered selection of features.

If you're feeling too edited and want to get back to ground zero, there's a factory initialize function. However, take note of a tiny (and strange) bug: Initialize won't work

if a footswitch is plugged in. Yamaha is checking on a fix.

Audition

How many times have you wanted to run through some effect programs without having to crank up the recorder or plunk on a keyboard? The REV500 provides a solution by offering built-in snare and rimshot samples that are triggered by the Audition button. You can tell the button which sample to play, and whether to play it once or for the sample to repeat until the button is pressed again. You can also turn it off. Since Audition is such a fantastic idea, I wish that the REV500 also had a kick drum, male and female vocal snippets, and some type of short, looped synth pad — maybe next time.

If you're a personalizing freak, you can type in two 14-character lines that will appear when you first turn the unit on.

Conclusions

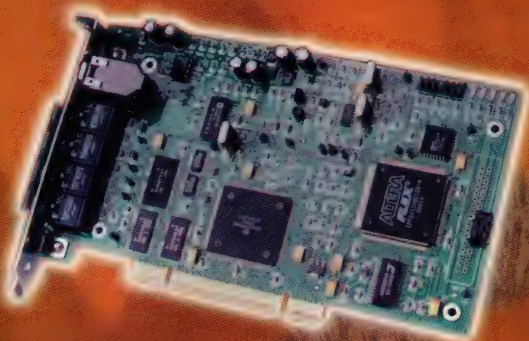
Yamaha product manager Peter Chaikin says that the concept of the REV500 was to offer affordable reverb that holds up to the quality of units costing much more. I would say they've met their goal for the most part. I wouldn't compare this reverb to Lexicon and T.C. Electronic units in the \$2,000-plus range, but it holds up extremely well against boxes in the \$800 to \$1,200 range — though most of these are *much* more feature-laden multi-effects. Nonetheless, as a dedicated and very affordable single effect, the REV500 would make a solid addition to just about anybody's studio or stage setup.

If you're putting your very first recording rig together, you may want to opt for a multi-effects unit, and then add something like a REV500 when you're ready to have a really nice reverb for your lead vocal. If you already have some effects but would like to make a quality jump, it's a relatively painless purchase. And even if you're a high-end commercial studio, the REV500 is versatile enough for many applications. Highly recommended. ■

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- 2 x ADAT optical
- 16 digital Channels In AND Out
- Stereo analog out

The BOARD



#16

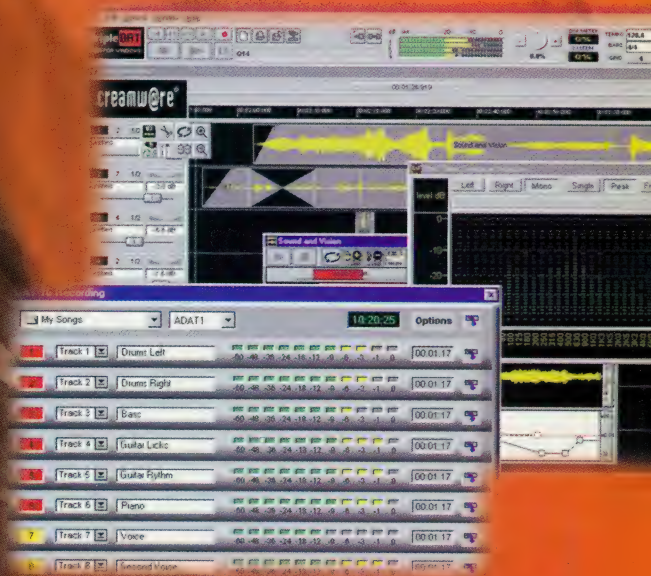
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Keith Emerson (Emerson, Lake and Palmer)

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+ Ratings Alert!

In our May '97 issue, we switched from a 5 Star sound rating system to a new, improved 10 Point scale. If you're just tuning in, here are some explanations that might help you put a face on the numbers:

RATINGS

- 10**
Superb. Groundbreaking work.
- 8-9**
Outstanding. Near the top of the pack.
- 6-7**
Good. Solid and musical.
- 4-5**
Average. Run-of-the-mill, but usable.
- 1-3**
Mediocre to poor.



For audio demos of sounds reviewed this month, visit Keyboard Central at www.keyboardmag.com.

POCKET B-3

OVERVIEW

A wide variety of Hammond B-3 sounds.

CONTENTS

96 files of B-3 sounds ranging in size from 28Kb to over 4Mb (including programs for five ROM-based organs). Representations of more than 40 drawbar settings presented without modulation, with vibrato or chorus vibrato, with second- or third-harmonic percussion, and with distortion. Simulated single- and dual-rotor Leslie effect with programmable slow and fast speeds, ramp-up and -down rates and curves, and stereo depth. Single- and multi-triggered percussion. Data slider control of key click level.

LICENSING

License-free to original purchaser.

SUGGESTED RETAIL PRICE

\$99.

CONTACT

Sweetwater Sound, 5335 Bass Rd., Ft. Wayne, IN 46808. 219-432-8176; fax 219-432-1758. Web: www.sweetwater.com.

Sweetwater Sound

Pocket B-3

Over two decades ago, the Hammond Organ Company stopped making tone wheels for their organs. Today, however, "tone wheels" are commonly found in CD players and CD-ROM drives. Granted, there are major differences between tone wheels and CDs. Likewise, there remains a considerable gap between the sound of a real Hammond tone-wheel organ — epitomized by the B-3 — and most of the wannabe emulations you'll find on synths and samplers.

One of the latest and most successful attempts to recreate the B-3's elusive magic comes from Sweetwater Sound in the form of *Pocket B-3*, a CD-ROM of samples and programs for the Kurzweil K2000 and K2500. While the sounds won't fool the purist, many come very close to sounding realistic. I have yet to hear better B-3 replications in any synth's factory soundset.

Besides checking out the *Pocket B-3* contents myself, I subjected them to the critical ears of three of the four experienced Hammond players who assisted in evaluating Motion Sound's new Leslie simulators (see page 93): Tom Coster, Barry Gould, and Chet Smith. While each prefers the real deal whenever possible, they will use substitutes on occasion.

Multiple renditions of over 40 different nine-drawbar configurations appear in the main directory, along with four two-drawbar settings for the pedalboard. Among the registrations are 88 8888 888, 88 8664 444, 88 8444 400, 88 8800 008, 88 5101 368, 87 4300 006, 80 8808 008, 48 8800 000, 28 8000 000, and 88 8080 880. Given the astronomical possibilities of nine eight-position drawbars, it's no surprise that every variation isn't represented. Missing, for instance, is the registration Booker T. Jones used for the second chorus of the MG's version of "Green Onions," Joey DeFrancesco's solo setting, and the upper-manual configuration preferred by the late Richard "Groove" Holmes: 80 8800 008, 88 8400 080, 88 8000 008, respectively. Chet Smith also noticed that a jazz drawbar setting he's partial to doesn't appear: "I usually work with only the 16' and 8' drawbars on the lower keyboard, and that registration is not offered in this library." Thank goodness the favorite rock and blues staples, 88 8000 00 and 88 8800 000, are there. "I would use the 88 8800 000 organ a lot," Gould beamed.

Within each group of drawbar configurations are renditions with second- or third-harmonic percussion, vibrato or chorus vibrato, and more. Both faithful and contemporary versions of the percussion voices are presented, the former triggering percussion only on notes played after all the others have been released, the latter sounding percussion on every note.

Key click is always variable in real time: Simply adjust the data slider to increase or decrease the click level. Most *Pocket B-3* organs also provide a Leslie simulation that's really well done. The mod wheel and secondary footswitch typically switch rotation speed, although you can reassign the effect to other controllers. One group of organs was sampled with fast and slow Leslie modulation, and Sweetwater's programmers — Daniel Fisher and David Gamble — deserve extra cookies for coaxing the Kurzweil to realistically morph between the two speeds under your command, rather than crudely switching between speeds with no ramp-up or -down time. You can also adjust a number of Leslie parameters, including the slow and fast rotation speeds, acceleration and deceleration rates, the stereo separation, and the speed-change trigger.



POCKET B-3	
SELECTION:	8
SOUND QUALITY:	8
AUTHENTICITY:	6
BANG 4 THE BUCK:	8

Since our evaluation setup included a real Leslie and some convincing substitutes, during the first part of the review process we selected *Pocket B-3* organs with a stationary rotary simulation. This choice revealed a flaw quickly noticed by each of the three guest evaluators: "Individual notes sound with and without the fundamental," Smith pointed out. "It seems to happen randomly." Messrs. Coster and Gould were a little more colorful in their assessments, but I won't quote them here.

Thankfully, this irregularity isn't too detrimental to *Pocket B-3*, as it affects only those programs with the braked Leslie. As soon as he became aware of it, Sweetwater's Daniel Fisher surmised that the problem was caused by out-of-phase voice triggering in these two-layer organ programs. He promptly sent a floppy containing macros that solve the problem. In fact, the macros are specifically designed for Motion Sound's Leslie simulators, drawing the

necessary samples off the CD-ROM but deactivating the internal Leslie simulation. By the time you read this, the CD-ROM will ship with this companion floppy, which will also be available free to current *Pocket B-3* owners. The same disk will include Sweetwater Sound's SW-B3, which allows virtual realtime drawbar control of harmonics on the K2500.

Aside from this problem, how did our guest judges like the *Pocket B-3* material? "Some of these organs sound really good in the upper register," noted Gould, "especially for playing rock. They'll cut through without making people's ears bleed." On the other hand, there could be more kick in the bottom — which can be adjusted using the helpful Customization Instructions that come with *Pocket B-3*.

Smith voiced another gripe: "There are different speeds of chorus vibrato happening. Some notes go slower than others, which tends to cause havoc in dense chords." These differences are inherent in sample-playback technology unless every key plays its own sample.

Associate editor Ernie Rideout also took some *Pocket B-3* organs for a spin. "There's a wide variety of organ tones that would be very useful in recording situations," he said. "Some are nice and gritty — a vast [Kurzweil pun intended] improvement on what you typically get from a sample-playback synth. The Leslie effect is better than most DSP rotary simulations." Ernie also mentioned that the *Pocket B-3* sounds were superior to those provided on a CD-ROM for the K2000/2500 from Greyt-sounds, *Philip Wolfe's Rock Keyboards Vol. 1* (July '95).

In my opinion, the *Pocket B-3* organs easily beat out what I used for organ until a couple years ago, an Ensoniq EPS-16 Plus loaded mainly with samples from Rubber Chicken's *Chicken CD-ROM* (see "The Great Sounds Roundup," Feb. '95). The Chicken stuff offered some wow appeal, but the *Pocket B-3* organs are much more realistic.

One of the best aspects of *Pocket B-3* is the economic use of RAM space by many of the organ programs and their related samples. Although there are a few that exceed the 4Mb mark, a majority dwell around the half-meg mark — leaving room for other items or yet more organs.

Owners of a RAM-equipped K2000 or 2500 shouldn't pass up the chance to add *Pocket B-3* to their CD-ROM libraries. For an excellent price, it serves up an exceptional range of quality organ sounds so convincing that only seasoned B-3 players are likely to hear the difference. —Mark Vail



DANCE MEGA SERIES

STYLIN':	1
PROGRAMMING:	2
DOCUMENTATION:	3
BANG 4 THE BUCK:	6

DANCE MEGA SERIES

FORMAT

Two CDs per package: one audio and one Akai/E-mu CD-ROM.

OVERVIEW

More one-bar drum loops than you could shake a stick (or your booty) at, plus plenty of other sounds.

CONTENTS

Jungle/Rave: 1,200 drum loops (140-180 bpm), jungle/ambient pads, rave synths, bass/synth multisamples. *HipHop/Electro*: 1,100 drum loops (850 hip-hop, 250 electro, 80-132 bpm), wah guitar licks and multisamples, synth chords, synth basses, hip-hop drum samples (50 bass drums, 75 snares, 30 claps, 42 hats, 27 percussion). *House/Dance*: 1,300 drum loops (120-139 bpm), synth bass multisamples, synth sounds, pads, organs, drum samples (33 bass drums, 16 claps, 59 Roland TR-909 hits).

LICENSING

Free for music production only.

SUGGESTED RETAIL PRICE

\$99.

CONTACT

Best Service, Siegestrasse 23, 80802 München, Germany. 089-345026; fax 089-3838-8484. Web: www.bestservic.de. U.S. distribution: East-West, 345 N. Maple Dr., Ste. 277, Beverly Hills, CA 90210. 310-858-8797 or 800-833-8339; fax 310-858-8795. Email: sales@eastwestsounds.com. Web: www.eastwestsounds.com.

Best Service

Dance Mega Series:

Jungle/Rave, HipHop/Electro, House/Dance

Let's start by accentuating the positive: If you're looking for a big bunch of killer drum loops, these German CDs could put your next mix — or your next hundred mixes — over the top. Each package includes both an audio CD and an Akai/E-mu CD-ROM, so you get exactly the same material in each format. Each package zones in on a specific range of tempos as well as a specific style, so you'll have exactly the beats you need, without a lot of stuff you don't want. All of the beats are one bar long, which is pretty limiting, but quite often you get six or eight closely related loops, which are assigned to adjacent keys in the CD-ROM programs, so you can do some phrasing if you need to. For the most part, the drum sounds are phat, and the rhythms chug along nicely. "The beats are big and bouncy, if rather shopworn," commented *Guitar Player* senior editor Joe Gore, who volunteered to be our second listener on this review. "But I wish there were more two-bar patterns and fills."

As a bonus, the discs provide numerous synth and bass synth sounds (though not as much in the way of single drum samples as I'd like, considering these are drum loop collections). "The guitar samples on the hip-hop disc have a certain farty charm," Joe added, "but they're all obviously the same player and instrument through slightly varied settings on the same envelope filter pedal."

Before you start salivating, though, a word of caution: The programming of the CD-ROMs sucks. First off, the loops don't loop. Lay a finger on a key, and the loop plays once and stops. But that's trivial, because everybody retriggers the loop at each downbeat. Harder to work around: Each loop is programmed with an envelope that allows it to play through clear to the end, even if you lift your finger. There is no way to trigger just the first beat or two of the sample and then leave a hole to drop in a fill. Put off yet? It gets worse. The programs containing the loops are in monophonic

mode. The loops themselves are stereo, but only one loop can be played at a time. Maybe you'd like to layer a kick-only loop with a loop that has no kick, just some spiffy hi-hat and tambourine. This is a common arranging trick, but you can't do it with these CDs unless you go in and edit the programs.

So let's say you're using the loops as the manufacturer obviously intended, triggering a loop from your sequencer on each downbeat and letting it ride through to the next downbeat, when it's retriggered. That should work, shouldn't it? Not with the Akai-format banks. When I set up a quantized sequence in Logic with a note-on on every downbeat, I found that when the sequencer was set to the nominal tempo of the loop, there was generally a tiny gap before the loop retriggered. If I sped up the tempo enough to get rid of the gap, the loop developed a jerky feel. With loops that are mostly low frequencies, you won't hear the gap, but with loops that have a lot of high ambience . . . well, let's be charitable and say it will give your music a new type of feel. Not all of the loops leave this gap, but many of them do. Joe Gore reports that the E-mu banks don't suffer from the gap.

The problems were consistent from one disc set to another, however. According to the liner notes of the *House/Dance* and *HipHop/Electro* packages, "many sounds are pre-looped," but I loaded several banks at random from each disc without finding any that were looped — and needless to say, the liner notes don't tell you which banks have the looped samples. The only good feature I noticed was that there's the right amount of velocity response in the loop programs, allowing you to adjust the volume by changing the velocity values in the sequence.

To a considerable extent, you can probably rescue the material by reprogramming the presets and then saving them to your hard drive. But the reason to buy a CD-ROM is so you don't have to program your own presets. If Best Service had just offered the audio CDs, they could have charged half the price and given almost as much value. The

programming of the individual synth sounds on the CD-ROMs is just as unfathomable, but we have better things to do with our pages than dissect a dead horse, so we'll leave the specifics to your imagination. Some of the samples are fresh and aggressive, but the programming is another story.

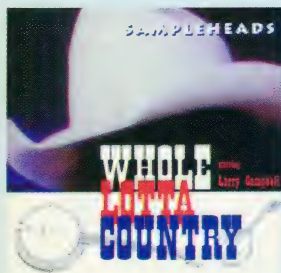
Of course, the audio CDs have their annoying side too. Each and every drum loop ends with this little *click* on the downbeat of bar 2. There's never any ambience holding over the bar line, because the click cuts it off. And do you really want to listen to over a thousand drum loops to try to spot a few that you'd like to sample, when over and over you have to hear this awful little *click*? Joe Gore wasn't bothered: "I personally don't mind the click," he said.

The liner notes boast that "all drum-loops are exactly tuned (sample-words!)," which probably accounts for the click. If you truncate the sample exactly at the start of the click, your loop should be just right. At least, that's the theory. When I sampled a couple of the loops, I found that one of them was only 16 sample words short of the theoretically correct value — but another was almost 1,600 words short. Hmm. . .

The liner notes also give no clue about the memory requirements of the various volumes; there's only a general note that all volumes are under 8Mb. In figuring out whether you can load more than one volume into memory at a time, you're on your own. The Akai S2000 I was using doesn't help, of course: Its load pages, like those of other Akai samplers, provide no display of file size.

The best thing about the Dance Mega series is the beats, which are hip enough to make the discs a very reasonable purchase, even given the package's other shortcomings. "I'd recommend this collection to anyone who needs to roll off a lot of musical wallpaper in a hurry," Joe concluded. The programming is a joke, but once you get the samples edited and start laying down some tracks, you may not care. —Jim Aikin

Circle Reader Service Card No. 170



Sampleheads

Whole Lotta Country

So you're gittin' set to demo yer latest country tune, destined to be a sure-fire hit — only the rest of the band done hightailed it on out to Tonipah for the rodeo. Dang-blast if one of them *synthesizers* will do the job. What'll Waylon think when he hears all them bleeps 'n' bloops? Course, if

you had jist a few sampled banjo an' pedal steel licks to fly into the mix, maybe Waylon wouldn't notice that you done played all the tracks yerself.

That seems to be the theory behind *Whole Lotta Country*. Or maybe it's about five-second flurries of rural American ethnic music tossed into TV jingles; that might be an even better application. For whatever purpose,

Sampleheads recruited multi-instrumentalist Larry Campbell to lay down a passel of authentic licks on banjo, dobro, mandolin, pedal steel, fiddle, and electric and acoustic guitar (the latter both high-string and normal tuning), and both 6-string and washtub bass. Most of the licks are a bar or two long, and many are of the fill variety, implying a dominant-to-tonic or some other

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Keyboard:

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Programs:

640 Programs and 500 Mixes internal, expandable to 1664 Programs and 1300 Mixes. Includes GM compatible bank.

Sample ROM:

16 bit linear 48kHz samples. **QS6:** 8MB internal, expandable to 16MB. **QS7/QS8:** 16MB internal (includes enhanced Stereo Grand Piano and Keith Emerson organs and modular synthesizer waves), expandable to 32MB.

PCMCIA Expansion:

QS6: 1 8MB card slot. **QS7/QS8:** 2 8MB slots. **QCard™** and Sound Bridge™ compatible. 8MB QCards include Hip Hop, EuroDance, Vintage Keyboards, Sanctuary, Classical, and more. Sound Bridge imports new samples and plays back SMF sequences from a card.

Synthesis Engine:

64 voice polyphonic, 64 part multitimbral, Tracking Generator, Modulation Matrix.

Controllers:

QS6: Pitch and Mod wheels, 1 assignable control slider, sustain pedal and assignable pedal inputs. **QS7/QS8:** Pitch and Mod wheels, 4 assignable control sliders, sustain pedal and 2 assignable pedal inputs.

Effects:

Alesis 4-bus multieffects with reverb, chorus, flange, delay, overdrive, EQ, rotary speaker emulation and more.

Interfaces:

QS6: Audio, MIDI, high speed Serial Port for direct connection to Mac™ or Windows™ computers. **QS7/QS8:** Above plus ADAT™ Optical Digital output.

QS Series CD-ROM:

CD-ROM includes free software for sequencing, editing and much more. Includes Steinberg Cubasis™, Mark of the Unicorn Unisyn™ for the QS Series, Opcode Galaxy™ module, 3000 extra Programs and Mixes, software demos and MIDI files.



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ALESIS

WHOLE LOTTA COUNTRY

AUTHENTICITY:	8
DOCUMENTATION:	8
SOUND QUALITY:	8
BANG 4 THE BUCK:	8

WHOLE LOTTA COUNTRY

FORMAT

Two audio CDs or SampleCell, Roland, or Akai CD-ROM.

OVERVIEW

Solo country licks on popular instruments.

CONTENTS

Disc One: Major, minor, IV chord, and V chord banjo loops at 95, 105, 120, 140 bpm (16 tracks, 150 loops). Banjo hammer-ons in G, A, B, and C (53 samples). Banjo single notes (23). Dobro loops at 95, 105, 120, 140 bpm, "Billy Bob," "Bluesy," "Classic," "Slides" (50 loops). Dobro slides up and down (40). Dobro sustained notes (13). Electric guitar loops: beer-can, "DroopAlong," "BarStool," honky-tonk, misc., assorted at 95, 105, 120, and 140 bpm (85 loops). Electric guitar bends (21 samples), slides (17), sustained notes (27), muted notes (25), X-notes (10). Tub bass (10 samples). Mandolin tremolos (26), major chords (13), major strums (15), minor chords (7), minor strums (16), seventh chords (13), sustained notes (30). Six-string bass (14 sustained notes, 9 muted notes). *Disc Two:* Pedal steel ending loops at 95, 105, 120, 140 bpm (48 loops), intro loops at 95, 120, 140 bpm (21 loops), other assorted loops (77). Pedal steel chords (30), bends down (15), bends up (15), swells (14), sustained notes (15). Acoustic guitar major chords (14), minor chords (13), 7th chords (14), sus chords (14), aug chords (14), dim chords (12), picked sustained notes (16), fingered sustained notes (17). Fiddle loops at 80, 105, 120, 140 bpm (61), hammer chords (6), sustained notes (14), staccato notes (13), pizzicato notes (34). High-strung guitar major chords (30), minor chords (26), sus chords (16), dim and aug chords (10), sustained notes (10).

LICENSING

Free for music production only.

SUGGESTED RETAIL PRICES

Audio: \$99.95. CD-ROM: \$249.95.

CONTACT

Sampleheads, 1600 Broadway, Rm. 704, New York, NY 10019. 212-262-3488; fax 212-262-2009. Compuserve: 72630.2350. AOL: SAMPLEHDS. Web: www.sampleheads.com.

progression. "The electric guitar tracks are a veritable twang-fest by themselves," Ernie enthused. "Even the slides and bends have attitude. The fiddle playing is full of grit, not Vassar Clements smooth. Nice hammered double-stops!"

You'll also find banjo hammer-ons, dobro slides, muted single notes on electric guitar, short and long fiddle notes at a variety of pitches, single guitar chords, and many more such ingredients. "It would have been nice to have strummed double-stops in thirds on the mandolin," Ernie noted. The box set includes two audio CDs for only \$99.95, or two CD-ROMs for \$249.95 — just about what you paid for that there pickup truck, ain't that about right?



Spectrasonics

Liquid Grooves

Drum loops are handy when they're played well. When they've got attitude, they're exciting. And when they're created with imagination and resourcefulness, they can be truly inspiring: Such are the loops contained on *Liquid Grooves*, the latest disc from Spectrasonics.

As with the companion volume, *Burning Grooves* (reviewed Jan '97), the loops on this collection are expertly performed and recorded, and the sound quality is uniformly excellent. Overall, the beats cover the laid-back end of the funk, Afro-Caribbean, and New Orleans end of the spectrum; they float along, hence the name "liquid." The basic grooves are very interesting: some have unusual Meters-style accents, others have syncopations that leave the 4/4 feel open to 12/8 or 6/8 interpretations. It's when you listen to the dozens of variations created by the addition of percussion and Korg Wavedrum parts, the omission of other instruments, the plethora of effects treatments, and the dozens of remixes that you begin to realize the potential of this disc.

On the CD-ROM version (which includes the audio CD; we listened to the Roland version), grooves are organized by tempo and instrument category, and each performance contains a "map" patch that lays out all of the options. Though nearly every loop within a groove could be used in the same tune, they are distinct enough to serve as springboards for completely different ideas. Drum and percus-

sion parts are isolated for you, and combined in ways that are obvious at times, surprising at others. Some of the remixes take the basic drum beats and speed them up 100%, jungle-style; new percussion parts are then mixed onto them. The heavily effected versions are striking in their attitude and atmosphere. Reverb, rhythmic delay, lo-fi, heavy EQ, vocoder, you name it — producer Eric Persing has outdone himself with creative processing. Although all of the loops start out as acoustic performances, by the time Eric has finished with the variations they're perfect for trip-hop, lo-fi, or acid jazz tracks. As for the disc's electronica potential, Greg Rule felt that the loops "aren't electronic enough for classic trance, but they might work as percussion overdubs to an 808 or 909 pattern." In most cases, the original solo instrument loops are provided dry as well, but in a few instances, such as the drum kit loops drenched in large hall reverb, they're not. A minor limitation.

Circle Reader Service Card No. 171

Many of the loops make good use of the Wavedrum; its unmistakable tone and texture are perfect for the other-worldly vibe of this disc. On the CD-ROM version, there are even two 61-key chromatic single-hit menus of Wavedrum sounds. Speaking of the kits: Drums and percussion are also broken out in kit form on the CD-ROM (not on the audio CD), with excellent velocity crossfading between soft and louder hits, and, thank you, no truncation of reverb tails. A bit of hiss comes through when you solo these hits at high volumes, but not enough to cause significant problems.

Musical, grooving, clever... aw, these loops just plain sound great. They're played right in the pocket by Bob Wilson (of Sea-wind fame) and Eric Boseman (L.A. session ace) — a truly jamming collaboration. "The recording quality and performances are first-class," says Greg. If these loops don't inspire you, hang it up. —Ernie Rideout

Circle Reader Service Card No. 172

LIQUID GROOVES

GROOVES:	8
SELECTION:	8
VERSATILITY:	8
BANG 4 THE BUCK:	8

LIQUID GROOVES

FORMAT

Audio CD, CD-ROM (Roland 700 series, Kurzweil K2000, Akai/E-mu/ASR, and SampleCell); CD-ROM package includes audio CD).

OVERVIEW

Processed, clean, and remixed laid-back drum and percussion loops, 53-117 bpm (up to 126 and 162 bpm, counting jungle remixes), performed by Eric Boseman and Bob Wilson. CD-ROM includes single-hit banks of acoustic drums, Korg Wavedrum, and percussion instruments (450 samples total).

CONTENTS

Audio CD: 52 groove tracks, each with up to 24 loops of varying instrumentation, processing, and mixing. Demo tracks. 70+ minutes. *CD-ROM:* 600Mb+, 32 groove volumes, about 500 stereo loops up to 8 bars long, about 30 single-hit menus.

SUGGESTED RETAIL PRICES

Audio CD: \$99. CD-ROM: \$199 (includes audio CD).

LICENSING

Licensed for use in music production; no fee, only liner note credits required.

CONTACT

Spectrasonics, P.O. Box 7336, Burbank, CA 91510. Distributor: Ilio Entertainment, Box 6211, Malibu, CA 90264. 818-707-7222; fax 818-707-8552. Web: www.ilio.com.

Do You Want The Original, A Copy Of The Original, Or Something Clearly Better?



MX12/4 High quality, medium quality and low quality mixers have a lot in common these days. They look alike and so do their ads. Success breeds imitators.

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But take heart. There are some differences you can hang your hat on. Look for the name Yamaha. Even if you don't know mixers, you know Yamaha is known for being "clearly better" in all we do.



If you do know mixers, you know that Yamaha supplies the largest touring sound companies with their world famous PM Series mixing consoles. The most demanding sound engineers in the world demand Yamaha's large PM consoles more than any other. Does this help us do small mixers better? You bet it does.

In the case of the new Yamaha MX 12/4, if you look closely, you can see some innovations that will save you money and make you

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- \$599.95 Suggested retail price
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- An on-board digital reverb (No extra charge. Yamaha is world famous for its DSP technology.)

- An on-board 7-band graphic EQ (Again, no extra charge.)
- No Radio

When you cut corners you might get more than you bargained for. Like radio. Designing mixers with solid RF rejection is not easy. It's one of those "inside things" you can't see. We've been dealing with the most demanding customers in the world using mixers in the most demanding environments. We do it better than anyone.

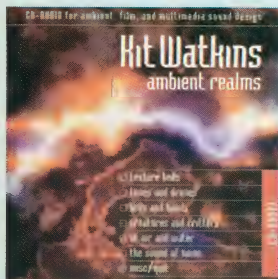
If you're in the market for a 12x4x2 mixer and you can accept better quality and value than you expected for the money, the new Yamaha MX 12/4 offers you a clearly better choice.



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READER SERVICE NO. 62



AMBIENT REALMS

ORIGINALITY:	8
DOCUMENTATION:	7
BANG 4 THE BUCK:	8

Kit Watkins

Ambient Realms

While it doesn't have the extended excursions into the ozone of David Torn's wonderful *Tonal Textures* sampling CD (also on Q Up Arts), *Ambient Realms* heads out in much the same direction. It's packed with gorgeous other-worldly sound effects, typically 20 to 30 seconds in length and surrounded in a rich wash of reverb. These are not mere academic exercises in sound design, either: They're from Watkins's personal library, and many have been used in his albums.

Audio processing often makes it hard to tell what the original sound sources were, but you'll likely spot chimes, kalimbas, bowed cymbals, and other exotica. Some of the samples are multilayered, while others are more in the pinpoint category. Some suggest a tonality, more or less; others are just plain atonal. A few are given as multisamples. (Since I was listening to the audio CD rather than loading banks from a CD-ROM version, I can't say how solid the programming is. According to Q Up, the sounds are prearranged in banks that should work well together.)

The frantic beeping of the "Short-wave" samples is guaranteed to set your

teeth on edge. The bowed and struck bowls are a wonderfully organic/metallic resource that you don't hear too often, and the bowed acoustic bass loop and shimmering bowed dulcimer tone are ominous enough to herald the approach of a stalker in a horror flick. The "cricket chorus" is a wonderfully complex and rhythmic confection of noise, but these are East Coast crickets; they don't sound much like crickets do in my neighborhood. Some of the nature sounds are throwaways, but the hummingbird chuckles (transposed down a couple of octaves, from the sound of it) seem almost human, or maybe like a mournful hyena. They're a refreshing alternative to over-used whale-song samples.

Watkins is less concerned with providing trendy techno samples than some developers; he's doing his own post-prog thing. There's plenty here, though, to spice up your next film soundtrack or ambient CD. I can't wait to layer a couple of the tonal beds under a hot drum loop — they're bound to add a whole new dimension of emotion.

—Jim Aikin

Circle Reader Service Card No. 173

AMBIENT REALMS

FORMAT

Audio CD, CD-ROM (Roland, Akai, E-mu).

OVERVIEW

Ambient sound FX, mostly electronic.

CONTENTS

Tonal Texture Beds (52 samples), Atonal Texture Beds (9 samples), Tones & Drones (16), Bells & Bowls (25), Creatures & Critters (33), Of Air & Water (14), The Sound of Noise (18), Misc/Quit (16).

LICENSING

Free for music production only.

SUGGESTED RETAIL PRICES

Audio CD: \$99. CD-ROM: \$249.

CONTACT

Q Up Arts, 1231 E. Warnock Ave., Salt Lake City, UT 84106. 800-454-4563 or 801-488-0062; fax 801-488-0065. Web: quparts.com.

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READER SERVICE NO. 63

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READER SERVICE NO. 64

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READER SERVICE NO. 65

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7 **MAC® & WINDOWS® 95-BASED AUTOMATION THAT'S RELIABLE, PROVEN AND AFFORDABLE.** Along with affordable digital multi-track recorders, the Mackie 8•Bus has made it possible to do world-class productions on a modest budget. But until now, Big Studios have still had one remaining and unattainable creative "secret weapon"... computerized level automation. That's why we developed the UltraMix™ Universal Automation System. It gives you fully editable and recallable

2 **IT EXPANDS ALONG WITH YOUR NEEDS AND BUDGET.** You'd be surprised just how many 8•Bus console setups like the one below are currently in use. But you don't have to start out this way. Start out with a 24•8 or 32•8 and then grow your 8•Bus console 24 channels at a time with our 24•E add-on modules. 1, 2 or even 3 of 'em connect in minutes. They come with their own 220-watt power supply; optional meter bridges are available.

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Above: 24•E 24-ch. expander with optional MB•E meter bridge and stand.

Above: 32•8 with optional MB•32 meter bridge and stand.

control of input, channel and master levels – plus features not found on even the most expensive proprietary Mega-Console automation systems. Equally important, it doesn't degrade sound quality, introduce zipper noise or cause audible "stepping." UltraMix is currently being used to mix network television music themes and on several major album projects – by seasoned engineers who grew up on Big Automation Systems. Their verdict is that UltraMix is a serious automation solution – stable, reliable and frankly easier to use than more expensive systems. The basic system controls 34 channels

and can be expanded to as many as 128 channels. UltraMix Pro™ software, for 030/040 & Power PC Macintoshes and PCs (Windows® 95 required), includes a wealth of features like editable fader curves, built-in level display, up to eight subgroups, SMPTE time code display, event editor with pop-up faders, optional control of outboard effects devices, and the ability to play Standard MIDI files from within the program.

UltraMix™ includes the Ultra-34 Interface, UltraPilot Controller and software for \$2797 suggested U.S. retail. Macintosh® or Windows® 95-compatible PC not included.



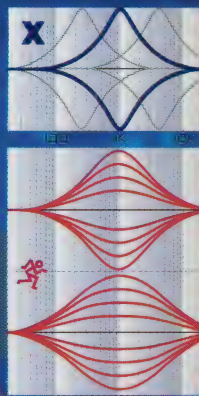
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6 WIDE MID RANGE EQ. Whether you're tracking or mixing, equalization is one of your most important creative tools. Mackie's 8-Bus consoles feature extremely-wide-bandwidth peaking EQ that can be used to achieve effects that simply aren't possible with narrower EQ. Most Brand X midrange EQs have a fixed bandwidth of about 2 octaves (blue graph at right). You can sweep it up & down the frequency spectrum, but the "sharpness" of the EQ curve is always the same. This kind of EQ is good for some purposes... but if you've worked

with it before, you know it's too drastic and localized for gentle changes in overall tonal coloration.



The 8-Bus' true parametric Hi Mid lets you spread the bandwidth out to as much

as 3 octaves (red curves above). That extra octave of "width" gives you a whole new creative palette.

* Rhetoric license applied for.

¹ Mention in this ad denotes usage only, as reported to Mackie Design, and is in no way intended to constitute official endorsement by the artists or groups listed.



Above: 24-E 24-ch. expander with optional MB-E meter bridge and stand.

Above: The SideCar, matching 8-Bus equipment rack.

8 WHAT ULTRAMIX AUTOMATION CAN DO FOR YOU:

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9 LEGENDARY RELIABILITY.

One of those factors you probably don't think much about - until your console goes down in the middle of a critical late-night session. Built with pride in Woodinville, WA USA, Mackie 8-Bus consoles have an enviable three-year track record for enduring continuous, round-the-clock use and abuse.



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READER SERVICE NO. 66

BY FRED HERSCH

Octaves and Tone

I recently received an email from a *Keyboard* reader that posed a number of technical questions, among them an inquiry about playing octaves. So I thought I'd take a break from our work on various tunes and delve a bit into some basic approaches to octaves.

In past columns, I've talked about piano tone and where it comes from, physically speaking. It is my contention that the best piano sound comes when the fingers are the least involved. By this I don't mean that you can get away without finger strength at all — it's that you'll get more sound with less effort if more of your body is involved. If you want to pick up something heavy, you don't just use your hands and wrists, you lift the object using your legs and back. Just because your fingertip is the point of contact with the key doesn't mean that it should do all the work — it needs something behind it in order for there to be any tonal quality.

There are various schools of piano technique, some that stress finger strength and others that emphasize arm

weight. The approach I advocate, however, involves playing from the upper arm, allowing the larger muscles to "draw" the big rhythms and phrases. The fingers simply transfer these into sound with a flat hand and a minimum of effort. You might think of a violinist's bow arm, which can play a large number of notes with a single large motion. This approach was developed by Abby Whiteside (1882-1956), the legendary piano pedagogue. Amadeus Press (800-327-5680) has recently reprinted her seminal books, *Indispensables of Piano Playing* and *Mastering the Chopin Etudes*.

While I don't have the space here to get into a comprehensive discussion of piano technique, there is an aspect of it that commonly leads to injury when played incorrectly: octaves. In a way, the octave is the perfect vehicle for discussing this approach to tone, for the fingers have little to do other than be poised over the notes you want to play. Two analogies describe the proper hand position: (1) The plastic dinner fork. You know, the ones that you get with take-out food. They're rigid enough to get the food to your mouth (usually, anyway!), yet they have a certain springiness. Similarly, your hand should be alert yet not tense, relaxed yet still retain

its basic shape. Try this: Hold your right hand out in the air in front of you with your fingers extended roughly to the interval of an octave. Make a fist with your left hand, turn it thumb-side up, and place it under your right wrist. Your right hand should feel like a solid yet flexible unit. Now poise your hand toward the fallboard and above any octave; pull your arm back toward you, playing the octave along the way. The idea is to play the octave with your arm and "dinner fork" without grabbing with your fingers or using your wrist.

(2) My teacher, Sophia Rosoff, suggests thinking of your arm bone as one long bone divided in two, from the elbow to the tips of the thumb and pinky. You play octaves by literally putting your elbow down on one of the two notes of an octave, then sliding your arm back towards you, playing both notes on the way. You can get a similar effect by turning your hand as if you were about to shake hands with someone, then poising it over the note you want to play. Then simply pull your elbow in or back as if you were making a piston motion. Not really a "karate chop" sort of move, because that would mean dropping your hand from the elbow, but similar in a way. At any rate, the deal is not to use the fingers or wrists, but rather your whole arm. Practice with your eyes closed, so you will feel the action come back up; that way you won't play into the action past the point of sound, where you'll end up getting stuck and wasting energy. See Examples 1 through 4.

Octaves are an important element of piano playing. They can add power and depth, and can be extremely effective in many contexts. If you're careful, you can add them to your technical arsenal, painlessly and with a great, relaxed sound. ■



Fred Hersch has just recorded a solo piano CD of Thelonious Monk compositions for the Nonesuch label, to be released in mid-1997.

Ex. 1. Try these octave arpeggio/tone tasks: (a) Play C to C as quickly as you can using your thumb, feeling your elbow "draw" the distance as you go. (b) Do the same thing with your 5th finger. (c) Play octaves with both fingers smoothly, quickly, and using your upper arm. (d) Now begin to fill in the arpeggio by adding the G on your way up. (e) Finally, fill in the entire arpeggio. Keep the rhythm steady, and concentrate on the "drawing" motion of the upper arm. Focus on the outer Cs; the E and G should take care of themselves. Try this with other types of arpeggios. Warning: Do not use your wrist. Keep it in line with your hand and forearm, otherwise you may be on the path to tendonitis!



Ex. 2. Try the same approach as in Example 1 with this five-note scale. Stay light and keep "drawing."



Ex. 3. To achieve legato with octaves, many people alternate between 4 and 5 on the top note, others prefer 3 and 5. Either way, this is only recommended if you have moderately large or flexible hands; the tendency to hold on and pivot between 4 and 5 can skew your hand, eventually causing injury. Break it down by first playing the bottom notes of a chromatic scale with your thumb (a), and then the top notes with 4 and 5 (b). Then combine (a) and (b).



Ex. 4. For octave leaps, practice by spreading them an extra octave apart. That way, when you play the octave leap as written, it'll seem really easy.



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The first criteria in choosing a reverb is always sound quality.

Everyone claims they sound the best but the



Yamaha REV500 has superior 32-bit internal processing and 20 bit A/D and D/A conversion. Most everyone else has 24-bit or less processing and 16 or 18-bit conversion.

The difference between 32-bit and 24-bit is audible: 32-bit processing gives you significantly smoother decay so your reverb fades imperceptibly into "silence." The difference between 20-bit and 16/18-bit conversion is also dramatic; 20-bit A/D D/A means the REV500 is excep-

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BY KASHIF

Publishing, Part II: The Practical Side

Welcome back to the second part of a two-part series on music publishing. In last month's column I discussed how music publishing works. This month will be devoted to the practical side. In short, I'll try to answer the question, "All this publishing stuff is fine and dandy, but how can it benefit me?"

A few years ago, Sheryl Crow recorded the song, "All I Wanna Do Is Have Some Fun." The circumstances were very unusual. The lyrics had been written years before by an English teacher with whom Sheryl was familiar, and the music was written many years later. The song became a huge success. The lyrics were never intended to be used in a song. The beauty of this story lies in its innocence. What was written as a mere poem in an educational environment, perhaps as a learning tool, and maybe as an inspirational one too, proved to have commercial appeal and value.

The innocence and simplicity is also reflected in the title and chorus of the song, "All I Wanna Do Is Have Some Fun." This simple, yet powerful set of words demonstrates perfectly my philosophy on what songwriting should be about — having fun. It also echoes my belief that the process of shopping songs (in other words, the business of songwriting) should also be fun. Yet the process cannot be fun if one is frustrated by the results.

I have met many songwriters who are plagued with the frustration of not knowing how to market their songs to publishers. They suffer further when the efforts they put forth don't yield the results that they were hoping for, like getting a return phone call or a letter from someone that they have sent their songs to. The following set of rules should both minimize your frustration and increase the fun factor in marketing yourself and your songs to publishers.

Marketing yourself to publishers is simple, once you know what publishers are looking for. Publishers look for writers who have an ability to write songs that generate dollars. They don't care how the money is generated. Whether the music appears in a movie or on a hit record is of no consequence to a publisher.

Be Prolific

Publishers like prolific writers. Writers who demonstrate that they can provide a steady flow of commercially viable songs have a good chance of landing a publishing deal.

Once you have a publisher's interest, don't let them off the hook. Even if you have them excited to the point where they are ready to issue a publishing contract, you should continue to write more songs that you can play for them. The reason is simple. The more songs the publisher hears that he or she feels can become hits, the better deal you can negotiate.

Networking

One of the best tools a songwriter can possess is the ability to network. As I travel the country to do lectures and seminars, I'm seeing more and more publishers attending these events. Making personal contact with a publisher or representative of a publishing company has many advantages, especially if you make a good impression. Be sensitive to the fact that many others may have approached the publisher on that day. By "sensitive" I mean you should acknowledge the fact that they are approached by other songwriters on a consistent basis.

To borrow from the hip-hop community's vast library of phrases, *Do not bum-rush the publisher.* First impressions are lasting ones. I am approached by tape-toting fools on a regular basis. Do not approach a publisher saying anything remotely close to the following: "Hey, yo, what's up? Man, your speech was dope. I mean, you one phat dude. Look-a-here, I got this here tape wit some phat jams for you right here. I'm telling you man, you better jump on dis here right away, 'cause if you snooze you lose." There is no greater turn-off than this type of approach.

Instead, your introduction might go something like this: "Hello, my name is Paul Simon

and I attended your lecture on music publishing and enjoyed it very much. I know you are approached all the time by writers, but I couldn't let this opportunity to meet you in person slip by. I was wondering if I could get an address to send you or someone else at your company a tape of my songs. Oh, and by the way, pay close attention to one called 'Bridge Over Troubled Water.'"

Know Your Market

It is important that you know who you are writing your songs for. It is even more essential to know the important players. Keep track of which publishers, record companies, artists, and managers make their living promoting, developing, and recording the type of songs that you write. These are the people who will benefit you the most. Seek them out and send your material to them. Sending your songs to the wrong people is a waste of time and money.

Do not send your songs to a publisher to have them critiqued. Try to track down the name of the publishing executive that you are sending your songs to rather than just sending them to a department. Having the name of the person who the tape is intended for is a demonstration of professionalism.

The Right Deal For You

There are several different



JACK GALLAGHER



Kashif is a solo recording artist, producer, and the author of *Everything You'd Better Know about the Record Industry* (Brooklyn Boy Books, P.O. Box 3029, Venice, CA 90294; 800-974-9449). He has written and produced hits for Whitney Houston, Kenny G, George Benson, and a host of others.

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- 6. ☐ Computer-Based Hard Disk Recording
- 7. ☐ Stand-Alone Hard Disk Recording

B. Which type of computer operating system do you use for music?

- 8. ☐ Windows 95
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types of publishing deals. There are administration deals, where the publisher gets only 15 to 20% of the usual publisher's share in exchange for being responsible for handling all of the necessary paperwork associated with the songs that you write. In an administration deal, the publisher puts no time or energy into promoting your career; that's up to you. [Ed. Note: In some administration deals, the publisher also decides who gets to use the song, so be sure to ask about this before signing such a deal.]

In most cases the publisher is also responsible for collecting all money that is earned, including the writer's share. The publisher then pays the writer. This type of deal should also include an advance to the writer from the publisher. The amount of the advance will depend on the stature of the writer.

Co-publishing deals are another type of arrangement that can benefit a writer. A co-publishing arrangement is when two or more publishers split the publisher's share of income. In most cases, whoever is giving the advance is responsible for administering the copyright. The split could be 50/50, 70/30, 80/20, or 20/80. No matter what the split is, if two publishers are sharing the publisher's income, the deal is still considered a co-publishing deal.

The key here is to maintain ownership of the copyright. Your stature as a writer and your attorney's negotiation skills will determine the split and your ability to maintain ownership of the copyright. If you cannot keep control of the copyright, try to negotiate a deal where the ownership will revert back to you at some specific time in the future.

Oftentimes publishers become involved in artist development. In fact, MCA Music, under the direction of Leeds Levy, played an important role in helping me secure a recording contract. They paid for demos, set up meetings with A&R directors at record companies, and helped me to set up showcases. The reason a publisher will do this is because, if the writer is also an artist and that writer/artist secures a recording contract that leads to a big success, everyone wins.

Here are a few tips to remember when negotiating your publishing contract:

- A writer should always receive an advance.
- Try to avoid situations where record companies demand your publishing rights.
- Negotiate a deal that says you have to write a certain number of acceptable quality songs rather than have a certain number of songs recorded and released. (For reasons beyond your control, even a song that you or your publisher places on a CD may not make the final cut.)
- Always have an expert music industry attorney negotiate on your behalf.

Remember, the more you know, the more you'll grow. I cannot guarantee success, but what I can guarantee is that knowing this information *will* help to keep things light. All in all, I do believe that it's possible to be a success in the songwriting business and still have fun. ■

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BY DAN BARRETT

Online Indecency?

Picture this scenario: After a year of hard work, you've finally completed your first solo album. As an independent artist, you decide to forgo the major labels and market the album on the Internet by yourself. So you sign up with an online service provider and create Web pages to market your CD. You include extended liner notes, lyrics, and digitally sampled excerpts of your music for prospective buyers to download and hear. Several weeks later, you receive a letter stating that you've broken the law. One of your sampled excerpts is from a hard-hitting, emotional ballad about AIDS victims, and according to the letter, the song is "indecent." For your crime, you may face up to two years in prison.

To a musician, "CD" stands for Compact Disc. To an accountant, it means Certificate of Deposit. On the Internet, the latest "CD" is Communication Decency, referring to the presence of obscene, "indecent," or other offensive material online. As I write this column, the United States Supreme Court is hearing arguments regarding the Communications Decency Act (CDA) of 1996, a piece of legislation that, if passed, will have wide-reaching effects on Internet users. This month, I'd like to discuss the CDA and explain its potential effects on musicians.

Overly Broad Legislation

The CDA was drafted in 1995 by Senator Jim Exon of Nebraska. Among other things, it says that "obscene, lewd, lascivious, filthy, or indecent" material, if transmitted over the Internet,

impossible for service providers to examine every communication made by their subscribers.

Rimm Shot

The CDA might have died a quiet death if it hadn't been for Martin Rimm, an undergraduate student at Carnegie-Mellon University. In 1995, he published a study of online pornography that was featured in a *Time* magazine cover story (July 3). The study was riddled with errors and overstatements, using dubious statistics to generalize from a handful of pornographic bulletin board systems (BBSes) to the entire Internet. That's like generalizing from a street-corner magazine stand to every public library in the world. But the story was sensational enough to reach the Senate floor, and not long afterward, the CDA was voted into law as part of

President Clinton's landmark telecommunications bill of 1996.

Almost immediately, a coalition of non-profit organizations, private companies, and Internet users sued the government, claiming that the CDA is unconstitutional and would stifle free speech on the Net. In mid-1996, a panel of three federal judges in Philadelphia agreed, ruling unanimously that the CDA violated the First Amendment. The CDA's supporters

appealed, and now it's in the Supreme Court. In the meantime, several states have passed their own mini-versions of the CDA.

Effects on Musicians

The Internet is a great place to meet other musicians and promote your musical career. Any musician from the novice to the seasoned professional can plunk down \$19.95 a month to join an online service provider, join discussion groups, create Web pages, and make his or her music available to a worldwide audience.

If the CDA is judged to be constitutional, this freedom could drastically change. Material that would be perfectly fine to include on an album or even on the radio could be considered illegal on the Internet. Socially pertinent topics like sexual harassment, abortion, and gay rights are all potential targets to be labeled "indecent" by somebody or other. Swearing in a song could be punishable by fines and imprisonment if the lyrics appear on the Net. And what online service providers would permit their users freely to put audio files online, if those files could potentially land the provider in jail?

Some *Keyboard* readers might think that this material should be illegal on the Net, and that is a perfectly valid opinion to have, though it differs from my own. Even so, the CDA would be a bad law. It is too ambiguous about what is acceptable and what is not.

What's All the Fuss?

Imagine if somebody said, "I want to pass a law that makes music concerts illegal, because pedophiles sometimes go to concerts and might kidnap any children found there." This would be a

Table 1. References on the Communications Decency Act.

Dan's overview of Internet censorship	www.ora.com/info/bandits/
Electronic Frontier Foundation Blue Ribbon Campaign	www.eff.org/blueribbon.html
Citizens Internet Empowerment Coalition	www.ciec.org/
Voters Telecomm Watch Guide to Internet Parenting	www.vtw.org/parents/
Center for Democracy and Technology	www.cdt.org/cda.html
Internet filtering software	www.eff.org/pub/Censorship/Ratings_filters_labelling/

may be a criminal offense. (The full text is available online from several resources in Table 1.) The CDA's goal is supposedly to protect children from viewing or being subjected to sex-related material online, and to prevent the spread of child pornography. This argument stirs powerful emotions in many people; naturally we are protective of our children. The language of the CDA, however, is so broad that it violates the First Amendment (freedom of speech). Although the word "obscene" is defined by law — and obscene material, such as child pornography, is already illegal — the word "indecent" is not defined. So, any material that offends anyone for any reason could be labeled "indecent." Think about how much music falls into this category.

Another major problem with the CDA is that it doesn't distinguish between direct transmission, such as an email message sent from one person to another, from indirect transmission, such as a Web page or newsgroup article that can be viewed by anybody. Direct harassment, whether by email or other means, is already illegal anyway. Under the CDA, however, if you make an "indecent" Web page that could

ever potentially be viewed by a child, you might be violating the law. This creates an ambiguous situation where people won't know whether their Web pages are legal or not, so

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pointless law because kidnapping is already illegal. It's also a strange law because it implies that concerts are somehow especially dangerous, or that pedophiles and concerts are associated in some special way to merit such a law.

The CDA is much like this. It starts with things that are already illegal and covered by other perfectly good laws, such as harassment and obscene material, and mixes in constitutionally protected speech, all wrapped up in a big blanket labeled "DANGEROUS FOR CHILDREN." People who have used the Internet for years know that it's largely a safe and beneficial place. (Senator Exon actually drafted the CDA without ever having used the Internet.) Yes, there is sex-related material online, just as in every other medium, and some of it may be violent or disturbing. But censoring the Internet is not the answer, especially when less restrictive solutions are already available: filtering software, and education.

Internet filtering software automatically blocks a computer from accessing certain material on the Net. The software is easy to install and can be instructed to avoid particular sites, such as playboy.com, or material containing particular words or phrases. Dozens of filtering programs exist today, and during the federal case in Philadelphia, such software was demonstrated to be effective. For more information, connect to Yahoo (www.yahoo.com) and conduct a search for the phrase **filtering software**.

Even more pertinent is the issue of education. On the Internet, almost all material is viewed by choice. We choose to visit a Web site, read a newsgroup, and so on. On rare occasions, people get harassing email that they did not choose to receive, but this is already illegal. Also, people sometimes click on a Web link and view a page that unexpectedly has offensive content, but nowadays most Web page maintainers voluntarily label such links.

Thus, hordes of children are *not* being exposed to sex-related material against their will on the Net. If kids are seeing this material, they are choosing to do so, and the best way to affect this is through education. People are bombarded with sexual imagery throughout their lives, so parents should discuss these issues with their children to help them deal with explicit material both online and off, both now and later in life.

Totally Decent

By the time you read this, the Supreme Court will probably have decided the CDA issue. Even if the CDA is struck down as unconstitutional, the specter of Internet censorship will not disappear. Musicians, as communicators through their art, must remain alert to threats to their freedom of expression, including those disguised as well-meaning legislation for the protection of children. ■

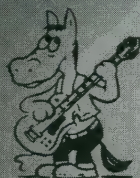
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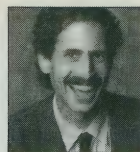
There used to be a category of keyboard players called pop pianists. These artists — Liberace, Roger Williams, Ferrante & Teicher — specialized in highly filigreed arrangements of current hits. They'd do Broadway medleys and Sinatra tunes. We're talking kick back in the rumpus room with a shaker of martinis and a one-way ticket to easy-listening land. These guys were hi-fi.

When I was ten somebody gave my parents a Peter Nero album and my life changed. Peter Nero did do some heavily ornamented cascades and parallel sixth melodies nestled in pillows of velvet violins, but he also played thrilling jazz. And since it was the first contemporary jazz piano I'd ever heard, it hit me hard. Within a year I'd discovered *Downbeat* and was pissing off my parents by staying up all night and scouring the FM dial for any sign of this sound; I couldn't get enough of it.

Inevitably, Peter Nero came to Baltimore, where I lived, and I dragged my dad and my best friend down to the Lyric Theater. We were not disappointed. The man was brilliant, funny, and passionate, and as soon as the show was over I dashed backstage to talk to him and ask him how he made these sounds. I raced through the crowd and up to where he was surrounded by adoring fans, all adults. He noticed me on the periphery and said, "Do you have a question?" I actually had a long list of questions, and the first was, "What were the notes you played for your introduction to 'Bluesette'?" He looked at the crowd, said, "Would you excuse us?" to all these waiting grownups, took me aside, and patiently answered my every question.

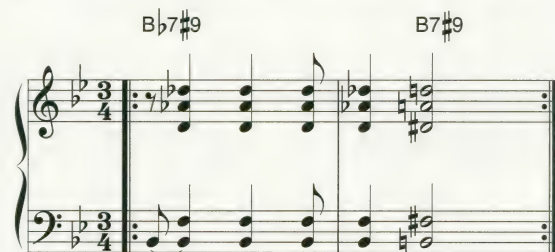
The beguiling chord he used for the "Bluesette" intro (see Example 1 — forgive me, Mr. Nero, it's been 30 years since I've heard it) was just a #9, the Gershwin chord, but to me it was manna, the Holy Grail, and the first of many chords that would serve as stylistic springboards in the years to come.

I took that chord and wrote it into every song I made up. I discovered that when you crunched it up (Example 2) you got something that

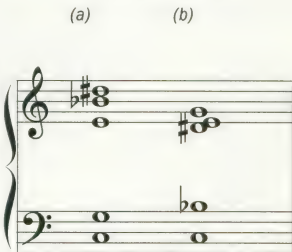


As a composer and songwriter, Richard Leiter has done projects for a wide variety of clients — NPR, Honda, Carl's Jr., ABC/TV, and Inglenook Wines among them. He writes and performs in California.

Ex. 1. A young person's introduction to the #9 chord, courtesy of Peter Nero.



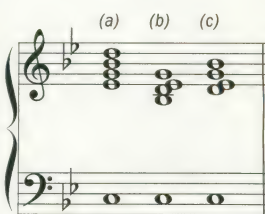
Ex. 2. The old #9 inversion trick.



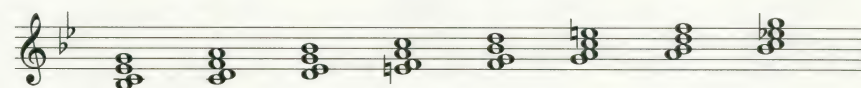
Ex. 3. That original nifty #9 voicing becomes the thrifty 13 when taken down a half-step over a Circle of Fifths progression.



Ex. 4. Take a stock m9 right-hand voicing (a), invert it (b & c), and you're ready to steal some moments.



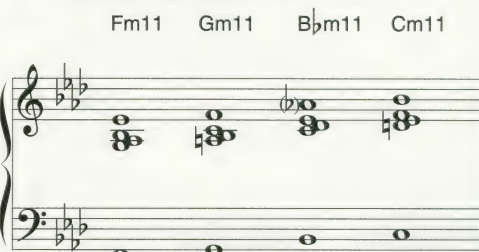
Ex. 5. Run voicing 4(c) up and down the keys over a Cm7 for some really nice moments. I suggest that you use an Eb on the fourth and sixth voicings to avoid implying a dominant or diminished sound, while still keeping the crunch.



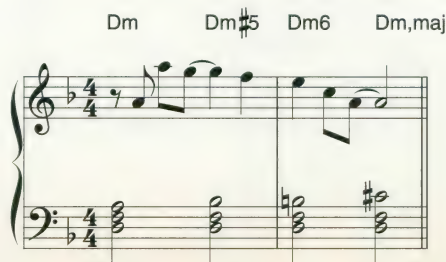
Ex. 6. Change the fifth of a m9 voicing (a) to a fourth (b), and you've got a m11.



Ex. 7. Note how parallel streaming with the m11 voicing sounds moody and ambiguous in comparison with Ex. 5. Comping with this voicing creates a texture that's great for supporting a melody.



Ex. 8. Here's a melody over a minor progression that has a certain amount of tension to it.



Ex. 9. Add some 9/11 clusters to the accompaniment, though, and this same melody and progression are transformed.



worked very nicely in R&B settings. Using it to comp in my left hand eventually led to my discovery of the 13 chord (Example 3) for which I was awarded the Nobel Prize in harmony and granted many happy hours of fooling around. The way the chord lays out with a tritone on the bottom and a fourth on top is a very ergonomic voicing on the piano, and it was years before I got sick of it and needed something else.

That something else came to me in the form of Oliver Nelson's "Stolen Moments," from the *Blues and the Abstract Truth* album. Integral to that tune is a voicing that is good for years of fun and frolic. Take a basic *m9* chord voicing and invert it so the 9th (now a 2nd) creates a tight little cluster (Example 4). Move this voicing up and down the keyboard (Example 5) and you get a wonderful sonority.

Another great leap forward happens when you keep the cluster but replace the 5th degree with the 4th (Example 6). Try some parallel motion (Example 7) and swoon. Compare the spare Example 8 with the very clustery Example 9.

I know I'm not alone in cherishing these simple but profound harmonic touchstones. I've got more, and I'll wager you do too. Please send me your harmonic amulets and I'll feature them in a column. Just jot a chord or two down on a piece of paper and send them to me in care of *Keyboard*.

And thank you, Peter Nero, for being such a decent guy and a terrific piano player. ■



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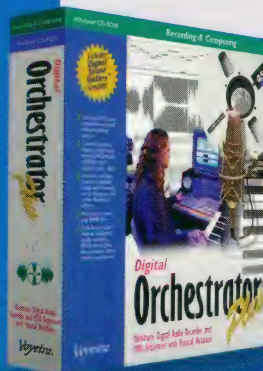
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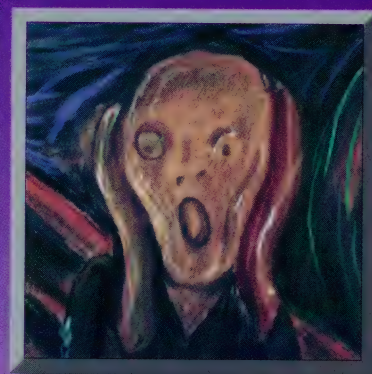
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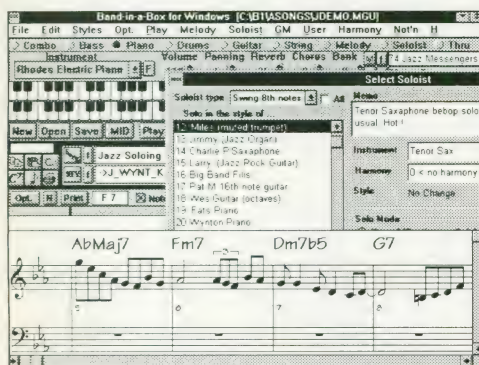
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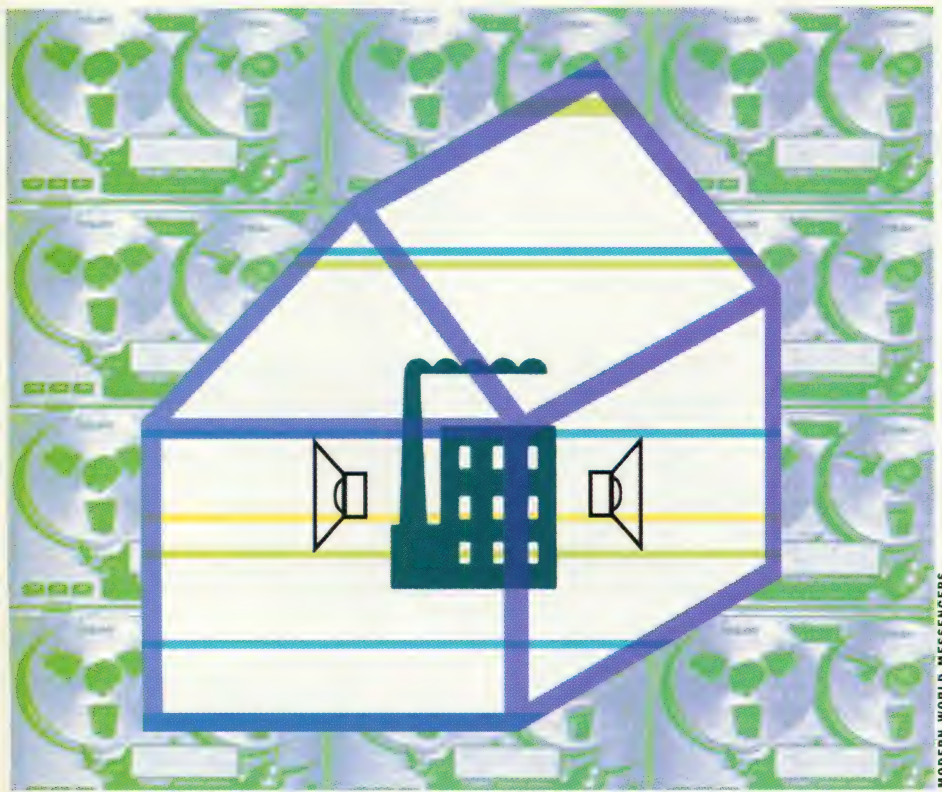
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BY JOEY DONATELLO



Mixing, Part 1

Dance music is probably the hardest music to mix, for me at least. Even though technology is making mixing easier to execute, there are rules to follow when mixing a dance record. I got my start seven years ago on a 24-channel Tascam mixer in a room the size of a walk-in closet. Lots of great things came out of that room because that's all we had, but we made it work no matter what. As time went on and budgets got bigger, we made the move to an actual mixing room in a "real studio."

THINK ABOUT IT! In the age of digital, we seem to have lost the "dirt" that makes so many tracks sound great. Sampling, especially with a low-rez sampler (such as Akai S900, 950, and MPC60, Ensoniq Mirage and EPS, and E-mu SP1200), will add some of that "dirt" that so many of us love. Rap has lived and lived very well in the 8- and 12-bit world. And there is a simple reason: It has attitude! So if you're sampling, take a second look at using that "lo-fi" sampler.

Starting with this month's column, I'd like to discuss mixing on all levels — from the home/pre-production setup to the big recording studio. But in this first installment, I'll focus on the low to mid-range, and then touch on the larger studio situations later. I want to sink my teeth into the do-it-yourself mix for selfish reasons. It seems that there is a heavy load of work in the Chicago area lately, and the local "big room" studios are full. The downside is that when they're full, the normal rate usually goes up. Studio owners seem to forget the thousands of dollars that we spent there when times were lean. So in times like these, those of us on a budget are forced to make it happen in our own production rooms. We at Music Plant have two rooms with 32x8 Mackies, plus my room with two Yamaha ProMix 01s.

So the question of the day is, how do you achieve the big studio sound in a small room? Let's talk about it.

Maybe some of you have had this happen: "It sounded great in my room, but it lost



Joey "The Don" Donatello is currently programming & mixing an album for The Hellinix 5, and he's working on the long awaited PhatHeadz 4, due out in June.

something when I played it on another system." Lucky for us at the Music Plant, we're mixing in our room, on our time, and with our people. But some people working alone, especially those new at the game, might be wise to consider hiring an experienced engineer. Like me, for example; this is one way I earn a living. If you have a good set of studio skills, and know how effects, compressors, and so on really work, I say do it yourself. You can spend more time on your song and really tweak it out. But if you need help in this department, I know that there are many engineers out there who are not working 24 hours a day, and who would love to make some extra money. If you do opt to hire an engineer, you should make it clear up-front what gear you have, and then ask his/her opinion on what gear (if any) you should rent.

Example: I just mixed a new 12" with Terry Hunter. The project is called One Vision; the song is called "Keep Your Body Movin'." For this we used our Mackie 32x8 board, but decided to rent — are you ready for this? — a TC Electronic M5000, Eventide H3000, Lexicon PCM-80 and 90, two Lexicon PCM 42s, Drawmer 1960 tube compressor, two dbx 163x de-essers, four dbx 166 compressors, two Behringer compressors, and a Focusrite Red 3 compressor. This may seem like a lot, and it is, but we're lucky to get a great price on the total rental because we rent so often. Establishing a good relationship with your local rental company can really pay off over time.

Back to the mix. I started out by patching all the effects into the Mackie. There are six aux effect sends on this particular board, so I used them all. I put the Focusrite Red 3 stereo compressor on the "2mix" insert, used the Drawmer 1960 for lead vocal and bass, and used all the other compressors on whatever needed it. This mix had a total of 16 tracks, so I really had no problem with compression.

Speaking of compression, this is a cool tip for bass: With the 1960 compressor, there's a mic or line input. If your bass sound comes from a synth module, I like to put the compressor on mic input, crank up the gain, and compress more. In my experience this seems to help fatten those sometimes stale sounds from the multitimbral boxes.

On my lead vocal, I used the 1960 to a de-ess. A de-esser does just that: It reduces the level of the frequencies that can make a vocal sound harsh. You may ask, "Hey, Joe,

why no external EQs?" Well, sometimes I do rent EQs, but you can contour the sound with compression as well. We were lucky in this mix because only three sounds came from a multitimbral synth module. Everything else including the vocals was sampled and sequenced, and since I cut the vocals up front, I got them to sound the way I wanted them to, so they didn't need any EQ — just compression and effects.

I started the overall mix with my kick, bass, and vocals. Usually, I start with vocals, but for dance we need to have the low end bumping, so I got my kick and bass happening first. Then I started to fill in with the rest of the mix. Once I got close, I referenced the mix with another record that I knew sounded great in clubs. Although I didn't have large reference monitors in this room, I could still make a good comparison based on listening to that reference music.

Also, it's important to make a "test mix cassette" and then listen to it on your boom box or car stereo. Again, whatever you know sounds good on those systems, use as a reference. If your rental company has one, it's also a good idea to get a frequency spectrum analyzer. This will let you see the frequencies and let you adjust them to your liking, and to your reference material. You can also buy one pretty cheap at a good stereo store. Any tool you can use to help make your product better is "all good," whether you spend \$100 or \$1,000.

Now the mix is sounding great and you're ready to lay off. Hopefully there isn't a lot of fader moving that you have to do. We at Music Plant don't have automation for the Mackie, so if I'm lucky to get it in one shot, great. If not, that's okay too; we're on our own time. For more complex moves, I'll bring in an Akai DR4 (4-track hard disk recorder/editor) and record my stereo mixes to that. If I mess up, I stop the sequencer, back it up a little, and continue. When it's all done, I splice the pieces together digitally in the DR4 and lay that to my DAT. A computer program (Digidesign Pro Tools, for example) is good for this cut-and-paste process as well.

It's a good idea to record several separate mixes. I usually take a few full passes: instrumental, a cappella, beats, and so on. This way you're covered in case there's a problem or some minor change that needs to be made. Believe me, take the time and cover yourself. A recall in this situation is really hard. Our recall is a video camera. We use a camcorder to record every channel up and down the board, shooting the outboard gear as well. I'll tell ya, it's a lot easier than making track sheets and writing down every channel by hand.

I know many questions have not been answered in this one short column, but I feel that by doing and re-doing, you *will* get better. It's not easy, but some of the largest and coolest tracks were done "in house," such as the Bucketheads' "The Bomb" and Armand Van Helden's "Funk Phenomenon."

Next month, we'll move into the large room with the SSL. Peace. ■

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READER SERVICE NO. 76

BY TITUS LEVI

Putting a guitar and a keyboard together in the same ensemble isn't always the greatest idea. It can lead to cluttered rendering of harmonies or redundant overlaying of comping parts, among other hazards and perils. Nevertheless, when it works well, it results in a rich palette of colors and lines — and it provides the ability to give the melody or harmony to either instrument, and the possibility of open-ended improvising.

The approaches to the guitar/keyboard combo used by Lvx Nova and Richard Tull use couldn't be much more different. Lvx Nova comes out of guitarist Bobby DeVito's master's thesis on ambient music; Tull worked in the clubs of Texas in various live rock bands. Lvx Nova's music dances, rocks, swirls, and sways; Tull's slams the body to the floor as if his instruments were the best approximation he could find for a battery of musical jackhammers. Yet both construct solid approaches to fusing guitar and keyboard.

Keyboard player and programmer Mike Meengs joined DeVito well into the project. "A lot of tracks of guitar were already there and I had to choose how to work with them, and which ones would be used. I'm happy that the end product turned out as well as it did."

Tull approached his *Cyberwhore* releases more organically: "I heard a lot of this in my head and just wrote it down." All the more amazing since the music begins and ends in a fever of unrelenting high energy.

The final compound found on *Cyberwhore* consists of heavy metal and its assorted variants (speed metal in particular), industrial-strength power chords, pulsing keys, and pinched, electronically altered vocals. Everything in the music communicates urgency, severity, anxiety. Even the occasional dreamy passages seem charged with the menace of the next impending sound explosion.

Tull refers to his guitar playing modestly, saying, "Every now



Name: Lvx Nova (Mike Meengs, keys; Bobby DeVito, gtrs). **Style:** Ambient. **Ages:** 30-something. **Influences:** Kraftwerk, Gary Numan, Human League, Depeche Mode, Yaz, Nine Inch Nails. **Main Instruments:** Ensoniq ASR-10 w/Bernoulli drive, a bunch of vintage keyboards, Korg O3RV, E-mu Morpheus. **Contact:** P.O. Box 25732, Tampa, FL 33622-5732. 813-824-5606, 813-273-8716. Email: bobbyzz@aol.com. Web: <http://www.sar.usf.edu/~devito/>.

and then I still play; I was half-decent years ago. For the tapes I had to go back and relearn things." Don't let him fool you. Though each tape (*Best Wishes*, *Cyberwhore 1*, and *Cyberwhore 2*) features progressively less guitar playing, Tull makes it clear that he can still wail on his first axe. Grinding chords run through most of the pieces, with blaze-o-matic guitar solos strewn liberally through the cuts. Tull says that he has "always loved synth," but his musical voice still clearly speaks most directly through the guitar.

Lvx Nova doesn't have the advantages — or disadvantages — of having the guitarist doubling as the keyboard player. DeVito and Meengs have clear personality and musical differences. This forms the backbone of their collaboration; their personal and musical rapport is the muscle and bone of the duo.

This comes through clearest on some of their more aggressive

Name: Richard Tull. **Style:** Industrial metal. **Age:** 28. **Influences:** Old Frontline Assembly, NIN, Bartók, John Williams. **Main Instruments:** Ensoniq ASR-10, Kawai Q80EX, Kawai G-Mega, Roland PC-200 MIDI controller, Alesis 3630. **Contact:** 4505 Cedar Springs #121, Dallas, TX 75219.

and vibrant work. Although this is ambient music, Meengs and DeVito show that they aren't afraid to get down in the pocket. Meengs says, "I'm a big one on beats; I always want to have a good groove happening." On "S-Lave," they achieve a near-dance club vibe; on "Melancholia" they achieve something liquid, elusive, and yet steamy.

Both Tull and Lvx Nova are keen to refine their particular styles of guitar-meets-keyboard musics. Given their challenging recording schedules and ambitions to increase distribution and visibility of their projects, they might just outgrow their Discovery-sized britches sooner rather than later. ■

SHORT TAKE

→ **Name:** Dorsel Fin (Jon Johnson). **Style:** Contemporary electric music. **Influences:** Klaus Schulze, Edgar Froese, Rush, King Crimson, Robert Fripp, Eno, Jeff Greinke, Cultures De Electriques, almost anything on the Hypnotic and Waveform labels. **Contact:** Duck Wave Records, 10009 Shell Drake Circle, Damascus, MD 20872. 301-570-

0396. Email: Jonny-j@ari.net;. Web: www2.ari.net/home3/jonny-j/.

Jon Johnson (Dorsel Fin) brings identifiable structure and melody to the party. He allows the melodies enough freedom to move into the occasional minor chord and sometimes dissonant

melodic realm. He charges each piece with a brightness and energy not often found in the latest electronic music. On the downside, his CD *Looking Past Lives* groans under the weight of its similarities to Tangerine Dream and their sequence-driven textures; his live playing tends to get a bit loosey-goosey in his timing and phrasing.



Titus Levi, founder of the California Outside Music Association, spends his free time struggling through graduate economics courses at U.C. Irvine. If you'd like to appear in *Discoveries*, send a cassette or a CD of your best material, a letter indicating your full name, age, style, influences, performance credits, goals, and equipment, a publishable phone/fax number and address at which readers may contact you, and a clear black-and-white photo of yourself with your keyboard setup. Photos should be labelled with your name and the photographer's name and address. All styles of music will be considered. Due to the number of submissions, material cannot be returned, and applicants will not be contacted unless accepted. Send all correspondence to Titus Levi, 5153 Hanbury St., Long Beach, CA 90808. Titus also invites *Discoveries* alumni to keep in touch with news about career advances.

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BY DAVE STEWART

The Lethargy Shuffle & The Repeated Note Syndrome

All around me the other *Keyboard* writers are busting a gut to turn in relentlessly upbeat product reviews, so in the interests of balance I have decided to introduce an occasional negative feature on products which displease me. This month's offending item is the *Alibi* CD from the German company Masterbits. Its lurid cover tells the story: A young blonde woman in stereotypical sexy clothing reclines on a sofa amidst cushions and candles, nursing a glass of what I imagine is wine, though it would be more amusing to suppose that it were seawater or hedgehog urine. She looks admiringly over her shoulder at a young man with dark, Tom Cruise-style good looks, wearing a shirt with a loosened tie (and some trousers), also holding a glass of some unspeakable liquid. He speaks into a telephone, and a conveniently placed speech bubble allows us to eavesdrop: "Hi Honey [*sic*], I'm still at the airport. My flight got cancelled and I have to. . . ."

Meanwhile, the *Alibi* CD positioned nearby is also speaking a few words, courtesy of its own speech bubble: ". . . arrival British Airways — Flight 305 from Paris — Terminal A Gate A23 . . .," it yells. Get the picture? The CD's recording of airport ambience is helping the guy to deceive his wife. Let's hope for the sake of all

concerned that he does not pick up the wrong disc and inadvertently subject his long-suffering partner to a series of recordings from the *Large Animals Copulating* nature soundtrack CD.

Masterbits suggest other deceitful usages for their disc, in marketing language tantalisingly close to perfect English: "Aunt Hilda's birthday is coming up and you still remember vividly how boring last year's party was. No problem. Choose *i.e.* [*sic*] track 16 (divided highway) and explain to Aunt Hilda on the phone that you have a flat tire, are stuck in traffic, or similar. . . . You successfully avoided the 'Coffee Klatch.'" (I am unsure whether a "Coffee Klatch" is a Germanic or North American notion, but for some reason the phrase irritated the

hell out of me.) Meanwhile, back on the infidelity theme: "After work you meet someone interesting but your wife is waiting for you with dinner at home. Put the *Alibi* CD in the CD-player, choose track 5 (train station atmosphere) and call home: 'Sweetheart, I missed the train. . . .' Have fun with your new acquaintance and enjoy the evening!" To be fair, the interesting new acquaintance might be a campanologist and the "fun" therefore not of the nudge-nudge, wink-wink variety, but the "adult" flavour of the cover artwork leads one to suppose otherwise. This whole wretched exercise in duplicity apparently went down a storm in Germany, attracting the attention of such repositories of learning as *Penthouse* magazine and even being awarded "the price [*sic*]



"The Lethargy Shuffle" comes from the CD *Missing Pieces* by National Health (East Side Digital, ESD 81172). Other sections of the piece were examined here back in the Dec. 1992 and Jan. 1993 issues. Dave Stewart plays fortissimo repeated triads and Barbara Gaskin sings non-repeating notes in the Stewart/Gaskin pop group. Web pages: <http://www.davebarbdemon.co.uk/>. Obscure questions about monkfish may be sent to: Dave Stewart & Barbara Gaskin, Broken Records, PO Box 4416, London SW19 8XR, England.

Ex. 1 (a), (b), (c), (d), (e), (f). The fabulous "Repeated Notes" quiz. Can you identify these well-known riffs?

(a) ♩ = 103

(b) ♩ = 144

(c) ♩ = 74

(d) ♩ = 94

(e) ♩ = 170

(f) ♩ = 190

Ex. 2. Keyboard riff in swing-time 5/4.

Swing feel
♩ = 90 Am9



Ex. 3. Same transposed up three semitones to C minor.

Cm9



Ex. 4. Third variation — down a tone to B♭ minor, new right-hand chord.

B♭m6/9



for idea of the week by a main TV-station." Evidently ideas were in short supply that week. In any case, for promoting dishonesty, promiscuity, adultery, disloyalty, and callous indifference to the plight of elderly relatives, the *Alibi* CD wins July's "Stinker of the Month" award. In their defence, Masterbits plead "Even that we only intended it as a funny joke!" [sic]. Yeah, well . . . no sense of humour, that's my problem.

But hey, there's more to life than tatty products dreamed up by sweaty marketing men. Observe the neat rows of dots in Example 1. It *should* be obvious even to those who cannot read music that these are depictions of repeated notes. Perhaps you recognize some of them? They are, in no particular order, extracts from Laurie Anderson's "O Superman," Chuck Berry's "Johnny B. Goode" guitar riff, the "Chariots of Fire" theme by Vangelis, the bass line to John Waite's "Missing You," the piano part from "At the Hop," and one bar of Stravinsky's "The Rite of Spring." (If you can't work out which is which, the answers are at the end of the column.) We rock musicians love repeated notes, because they enable us to mindlessly bash out a rhythm without having to worry about melody, chord changes, and all that fancy stuff. Countless pop records feature the sort of single-note bass or synth lines and staccato repeated chords shown in my examples, and some orchestral writers are fond of the style, too: It's a well known fact that John Williams' thumping *Jaws* theme was originally intended to be a single repeated note, but a virulent attack of hiccups when transcribing the piece led to the alternating bass semitones which we now all associate with fierce flesh-eating fish.

Talking of "At the Hop," incidentally . . . how on earth did the guy manage to play that piano part? Ding ding ding ding ding ding ding . . . the triads hammer out relentlessly all the way

through the song, and the player never falters. It sounds like a fire bell. Okay, pop records from this era used to last for only a couple of minutes, but I can't play triads at that speed for more than 20 seconds without cramping up. Be it the result of a misspent youth, steroid abuse, or countless hours at the piano gymnasium, that piston-like forearm action is something to admire. I tell you, if my bicycle developed a flat tyre while I was being pursued through the jungle by baboons, the pianist from "At the Hop" is definitely the person I'd entrust with the pump.

There are, of course, other uses for repeated notes outside of "At the Hop" and the *Jaws* theme played with hiccups. Take, for example, an extract from a piece called "The Lethargy Shuffle," which I used to play with my old band National Health. (Named after my glasses, in case you didn't know. I now wear contact lenses, but "Permalens Extended Wear Soft Lenses" doesn't have quite the right ring for a band name.) "The Lethargy Shuffle" is full of repeated notes, though they tend not to be arranged in 4/4 time. Peer through the wrong end of your telescopes and binoculars and there, very distant but still dimly visible amongst the rest of the tiny print, you will see Example 2, which is a thumping *Am9* keyboard riff in swing-time 5/4. The left-hand part could be played on *Jaws*-style cellos and double basses, but in National Health its top notes (C to A) were doubled an octave down by the bass player, which saved us a lot of money. The right-hand part needs a fairly hard piano-like sound, and when playing it, the keyboard player effectively becomes the drummer. These eighth-notes are the pulse of the music, and to make them swing you need to play with the rhythmic concentration of a drummer hitting a hi-hat. Unfortunately, National Health invariably played this section too fast (a combination of excessive adrenalin and the fact

that the preceding music dragged if played too slowly, a compositional problem I have yet to solve) and that detracted from the power of the riff. However, by stamping your foot three times every two seconds (the method used by Australian Aborigines to calculate 90 bpm before metronomes were invented), you should be able to bang out the riff at its optimum speed.

The *Am9* riff is played four times, then moves upwards three semitones to C minor, where it is played twice (Example 3). A third variation (Example 4) sees it slide back down for two bars in *Bb* minor, this time with an altered right-hand chord (note the widely spaced voicing of *Bbm6/9*). Over these eight bars (starting in bar 2), a combination of electric piano, guitar, and woodwinds plays the music in Example 5, the electric piano's melody (with fuzz guitar doubling its top line) answered by descending, slightly dreamy woodwind chords. The woodwind parts (from the top, flute, clarinet 1, clarinet 2, bassoon) were added some time after the piece was originally written, which is why they are absent from the early recording of "The Lethargy Shuffle," which appears on the National Health retrospective CD *Missing Pieces*.

"The Lethargy Shuffle" also has its own pumping bass line, but examination of that will have to wait till next month. Conversely, I am always open to bribes, so if you would prefer me to provide a lengthy musical analysis of, say, the soundtrack of *Evita* or the collected remixes of Jellybean Benitez, just send a five figure cheque to me c/o Keyboard. ■

Answers to "Repeated Notes" quiz: (a) Bass line from 12 million pop songs, including "Missing You," (b) "Chariots of Fire" (et al) one-finger synth intro, (c) "O Superman" — ha, ha, ha, ha, (etc.), (d) Did you get this Rite?, (e) Chuck rips it up, (f) The pumping-iron piano from "At the Hop."

Ex. 5. Additional woodwind and electric piano parts.

The musical notation for Example 5 is presented in two systems. The first system is for the *Am9* and *Cm9* chords. The woodwinds part (upper staff) shows descending chords in the right hand, while the left hand has rests. The electric piano part (lower staff) features a driving eighth-note rhythm in the left hand and a melody in the right hand. The second system is for the *Bbm6/9* chord, continuing the same pattern for both parts.



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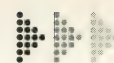
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BY CRAIG ANDERTON

The MD/MIDI Connection

MiniDisc multitrackers have proven to be a viable "audio sketchpad," whose sound quality far exceeds that of analog cassette-based multitrack recorders (the market niche MD machines are targeting). But even with the ability to bounce several tracks into one and do relatively high quality pre-mixes, the fact remains that so far, they're 4-track devices.

However, there is an easy way to augment the total number of tracks: Mix in sequenced "virtual" tracks played by MIDI instruments (they're called virtual tracks because they aren't recorded on the main multitrack machine, but feed into a mixer just as if they were regular audio tracks). All current MD multitrack recorders output MIDI sync, to which you can "slave" a sequencer. This could be a stand-alone or computer-based version driving a sound module, or the sequencer in a keyboard workstation. The sequencer drives various MIDI instruments, or different sounds in a multitimbral module,

although there are four common variations of MTC, each with a different frame rate.)

When a sequencer is synced to MTC, it references its own internal tempo — in the bars, beats, and measures of musical time — against the absolute time. For example, if the tempo is 120 beats per minute, the sequencer knows that the 60th beat has to line up with 30 seconds of elapsed time. A sequencer that responds to MTC can change tempo or time signature at any time; the sequencer simply re-calculates where notes should fall with respect to absolute time.

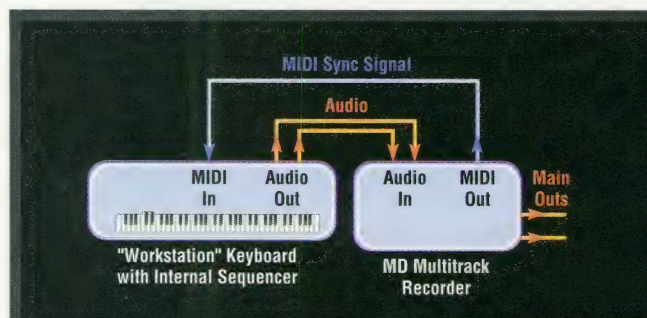


Fig. 1. To add sequenced "virtual" tracks to a MiniDisc recording, sync the sequencer to the MD recorder's MIDI clock output, as shown.

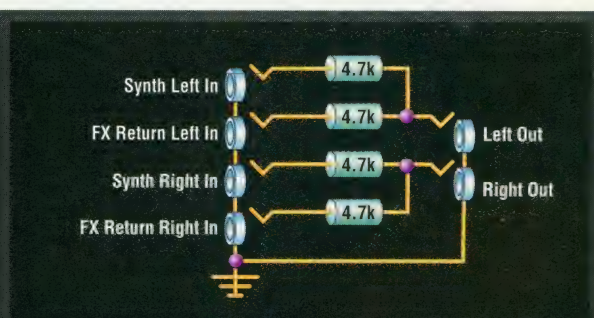


Fig. 2. Not enough audio inputs on your MD recorder's mixer? Build your own passive mixer by following this circuit diagram. (The resistors are all 4.7k ohms. If you have no experience reading circuit diagrams, check your local public library for a good how-to book.)

whose audio outputs can then feed the MD's mixer (see Figure 1). The MIDI virtual tracks are well-suited for playing keyboards, electronic drums, bass, etc., while the MD stores acoustic tracks such as vocals or guitar.

This MIDI plus MD approach is an alternative to MIDI plus digital audio sequencing programs such as Opcode Vision, MOTU Digital Performer, Cakewalk Pro Audio, etc. When playing digital audio tracks, these programs tax computer resources heavily; if you have an older computer, you may be better off using the sequencer you already have and adding an MD recorder, especially if you need a portable songwriting setup as well — MD multitrack recorders work very well for that application.

If you don't understand the issues involving synchronization and virtual tracks, you're likely to have a frustrating time trying to get your music together, so let's take a closer look.

MIDI Sync Formats

There are two common MIDI sync formats: *MIDI Time Code* (MTC), and *MIDI clocks with song position pointer* (SPP). MTC is a sync signal based on absolute time — how many hours, minutes, seconds, and frames have elapsed since the start of the song. (A frame is generally 1/30th of a second,

MIDI clocks are a tempo-based sync signal. They're transmitted 24 times per beat, so if the tempo is faster, more clock messages are transmitted per second. Song Position Pointer is a message that tells the receiving device how many sixteenth-notes have elapsed since the beginning of a tune. SPP is what allows a sequencer to follow along no matter where you start the song on the MD; the MD sends an SPP message to the sequencer based on the song pointer data, and then sends a continue message so the sequencer starts playing at the correct point. If the sequencer is synced to MIDI clocks, the MIDI clock rate determines the tempo. (Note for dance music fans: Sequencers have to do less processing if they're syncing to clocks rather than MTC, which can give greater timing accuracy.)

Tempo Maps

But what happens if you want the MIDI clock sync signal to change tempo at various points in the song? After all, a static tempo can be pretty uninteresting. Fortunately, all MD multitrack machines allow for creating *tempo maps* — a programmed series of tempo changes. Typically, you can change time signature on any measure, and tempo on any beat. The time signature setting is purely to give you the correct visual feedback (in the MD's display) on the structure of your song, since the SPP value is in total sixteenth-notes, not in bars and beats.

There will usually be a per-song and per-disk limit on the number of tempo map changes you can add, but this isn't too



Craig Anderton, author of *Home Recording for Musicians*, will be giving a master class in music technology in Austin, Texas, July 6-11 and in Freiburg, Germany, August 9-14. For more information, call 800-234-6479 or 860-567-8529.

severe a restriction unless you plan to do *lots* of tempo changes. If you're just adding changes for the verse, chorus, solo, and a few *other* places, you'll have enough to work with. A potentially more restrictive limitation is that in current MD models, tempo changes are limited to 1 bpm (beat per minute) increments, which is not fine enough resolution for all of the subtle tempo changes that you might like to make.

Tempo maps require that the MIDI part of the song be structured in advance, so it's best to *start composing* with the MIDI sequencer. When you know where the tempo changes will be, you can create a tempo map in the MD recorder that matches what you've developed in the sequencer, and then use the MD for adding digital audio overdubs.

One sync issue with MIDI clocks (but not MTC sync) involves varispeed playback. The Tascam 564 will track speed changes, so if you want to (for example) speed up the audio playback by 1%, the MIDI clock rate will speed up by 1% as well. On the other hand, with the Sony MDM-X4, MIDI clocks do not track speed changes. One workaround is to play back the sequence and record the MIDI instrument sounds into an MD track. Then when you change the audio playback speed, all of the audio, including what started out as a sequence, will change pitch. This may or may not be what you want. Also, you'll most likely want to postpone doing a sequence-output-to-audio-track transfer until the MIDI sequence is in its final form.

Adding Virtual Tracks to the Mix

Since MD mixers have a limited number of inputs, you may need some ingenuity to feed virtual track signals into the recorder. The 564 lets you mix MD tracks while simultaneously feeding signals into the main mixer inputs. With the Yamaha MD4 and MDM-X4, you can either monitor the MD tracks or the signals appearing at the channel 1-4 main inputs — not both. (With the MDM-X4, the stereo 5/6 input is still available for virtual track inputs while channels 1-4 are being used for disc playback.)

One workaround, if you need virtual tracks, is to feed signals into the effects return jacks. If you need to feed in effects returns as well, there's no reason to spend big bucks on an active mixer: A simple passive mixer (see Figure 2) allows blending in both synth and effects sounds (this is also handy for feeding in more than one set of effects outputs). Otherwise, virtually any small active mixer will do.

MIDI to the Rescue

A long time ago, in a galaxy far, far away, it was predicted that MIDI would eventually fade away as digital audio became more cost-effective. On the contrary, although digital audio continues to grow in impact, MIDI remains a supremely efficient way to record, store, and edit music data — and it works very synergistically with digital audio. As long as MDs can't record beyond four (or even eight) tracks, a lot of MIDI sequencers will continue to be gainfully employed. ■

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BY JIM AIKIN

PC Basics, Part II: Software Tools

Just reading one or two columns in a magazine is not going to turn you into an expert on the PC and Windows 95. That would take a thick book. The goal here is more modest. If you've just bought your first PC for making music, or if you're contemplating such a move, you may be a little nervous about the PC's not entirely undeserved reputation for operating system weirdness. In this two-part series, which began last month, I'm trying to demystify the PC for musicians. I've been introducing the basic concepts that you may (unless everything goes perfectly, which it won't) find yourself grappling with from time to time in the course of installing new hardware and software.

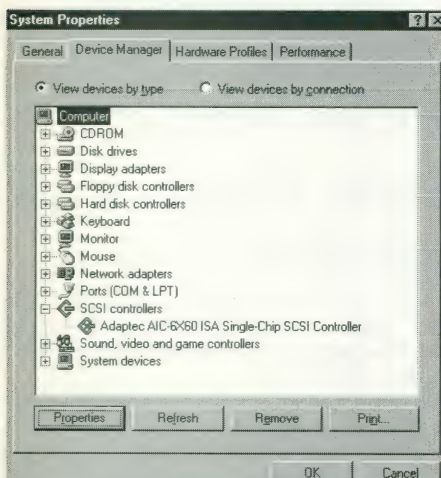


Fig. 1. The Windows 95 Device Manager window. Note the minus sign beside "SCSI Controllers": The menu tree is open to show the Adaptec SCSI device. You can click on the Properties button while Computer is highlighted to view IRQ, DMA, and other resources.

Last month we looked at MIDI and audio hardware, including soundcards. We poked around in the chassis to discover the two basic types of slots into which hardware is typically installed, talked about the two hard drive busses, and introduced your hardware's IRQ and DMA settings. This month we'll double-click on Device Manager, peer deep into the computer's BIOS, and explain how to edit .INI files. But first. . .

Plug & Play. In developing Windows 95, Microsoft wanted to fix it so that you'd never have to mess with any of this stuff again. To minimize user confusion, they came up with a hardware/software standard called Plug-and-Play (PnP). The idea is simple: When you install hardware, such as a new

soundcard or SCSI controller card, Windows is supposed to detect the card and automatically configure it. If all goes well, you'll never need to worry about its settings.

Windows does a pretty good job of this. Much of the time, all you have to do is insert the card, switch the computer on, and then follow the onscreen prompts. You may be prompted to insert a diskette containing the *driver* software for your hardware. The driver is a small, specialized piece of software that allows Windows applications to send and receive data from the hardware. If the new hardware needs a driver, the diskette should be in the box that it came in.

If your new hardware is Plug-&-Play compatible, Windows will be able to switch the IRQ and other settings automatically to whatever values are needed so that your system as a whole will function. In the Brave New World of PnP, you should never need to set a jumper or a DIP switch again. (We discussed jumpers last month.)

But let's say you want to keep using an older soundcard. These are sometimes called "legacy" devices in the PnP world, because they're an inheritance from previous generations of the PC. Windows

95 can't change the settings of legacy cards. It may not even be able to tell that they're in the computer. As a result, it might try to set some *other* device (a PnP card) to an IRQ that it *thinks* is free, causing a conflict. (Such conflicts can result in anything from intermittent loss of MIDI data to the computer being unable to boot up.) In order to give Windows a hint about what IRQs are free or occupied, you may have to poke around in the Setup utility. This is best done while you've got a technical support specialist on the long-distance line, but if you'd like to impress this person with your computer savvy, feel free to take a look around Setup before you make the call.

Setup. Setup is a utility program that gives access to your computer's BIOS. (That's an acronym for Basic Input/Output Services.) The BIOS is the hardware operating system; it starts before Windows does. To enter Setup, you press whatever key you're instructed to press during the initial boot-up phase: A line will appear on the screen saying, "To enter SETUP, press DELETE," or words to that effect. On my IBM Aptiva, you use the F1 key rather than the DELETE key.

Shortly you'll see a DOS-type screen with a menu of some sort. You've left the land of the mouse: Instead, you'll navigate around Setup with the arrow keys, plus ENTER and ESCAPE. On my computer, the up and down arrow keys take you to new items. If the item is editable, pressing the left or right arrow cycles you through the available values. If it's a menu item, pressing ENTER opens a dialog box, or executes the item. The selected item will be in a brighter color, or highlighted.

Setup is used for a number of things that are beyond the scope of this column, such as configuring your RAM slots for standard or EDO (extended data output) memory. In fact, each hardware manufacturer has their own BIOS, so they may have a few of their own Setup options. I used Setup to tell my PC to boot first from the internal hard drive and second (if the first option fails) from the floppy drive. This lets me keep a floppy in my drive at all times for backing up sequencer and word processor files; I don't have to eject the floppy in order to boot the computer, as I did on my old PC.

Press ESCAPE a few times and you'll be asked whether you want to save your changes. As long as you choose "no" while exiting, nothing you do in Setup can mess up your computer, so there's no harm in taking a look around.

Device Manager. More often you'll use the Windows 95 Device Manager utility to resolve system-level conflicts. There are two ways to open Device Manager. If you right-click on My Computer, a pop-up menu will appear. Choose Properties, and then click on the Device Manager tab in the System Properties box (see Figure 1). Alternatively, you can double-click on My Computer, double-click on Control Panel, double-click on System, and again choose the Device Manager tab. (Double-clicking on Multimedia in the Control Panel and then choosing the Advanced tab also gives access to some useful settings.)

Again, there's far more in Device Manager than we have space to discuss. Take a little time to familiarize yourself with it. Often you'll find additional settings hidden under buttons called Properties, Settings, or Advanced. When you see a menu tree with little plus signs along the left edge, you can click on the plus sign to view the devices in that area, then select any item and choose Properties. You may be surprised at how extensive Windows' substructure is.



Senior editor Jim Aikin has been recording audio on his PC since Digidesign first introduced Session 8 in 1993. In all that time (knock on wood) he has not had an audio hard drive crash. In fact, he's still using the same 1.5Gb drive — and the difference between what he paid for it in 1993 and what it would cost today is enough to bring tears to your eyes.

Again, you can back out of this area without making a mess of your system by clicking on the CANCEL button to exit Device Manager. If you change any of the settings, Windows may instruct you that you need to restart the computer before they'll take effect.

If you're having a hardware conflict, you may need to physically remove a card from your computer. Before doing so, you should use Device Manager to remove the software driver(s) that address the card. If you mistakenly remove the hardware first, you may be confronted by a series of error messages every time you boot the computer — and Device Manager may not let you remove the drivers because it encounters a hardware error (namely, that the hardware isn't there anymore).

Sysedit. A third area where you may need to make adjustments is in the Windows .INI files. These are text files, which means they can be edited with any simple notepad-type word processor. In fact, you're well advised to use the Windows Notepad utility or the System Configuration Editor rather than a high-end word processor, because the latter will store files in a form that contains a lot of extraneous information. The .INI files and their relatives *must* be stored as text-only files, and must be stored in the correct directory so that Windows can find them.

The easy way to get to these files is to choose Run... from the Start menu. In the box that opens up, type "sysedit" (without the quotation marks) and hit RETURN. In a moment, the System Configuration Editor will open, and you'll see a window like the one in Figure 2.

Again, feel free to poke around in the various displayed files to see what's there. As long as you don't save your edits, you can't hurt anything. If instructed by a tech or a manual to edit one of these files, it's important to type *exactly* the indicated characters. Even the spaces are important: You mustn't put spaces around an equals sign, for instance.

The System Configuration Editor doesn't have a "Save As..." option in the file menu. If you want to save a copy of an .INI file as a backup, open it with Notepad or start by copying it (from the desktop). Put it in a different folder, and rename it something safe, such as WININI.OLD. Then proceed to edit the WIN.INI file.

You may need to remove a line in one of these files, in order to strip some feature out of your system. Since you might want to put the line back later, don't simply delete it. Instead, type the characters "REM" or "rem" (again, with no quotes, and followed by a space) at the start of the line. This turns the line into a "remark," a line in a computer program that is ignored when the program runs. Typing REM is called *remarking out* or simply *remming out* a line.

There's much more to the PC than we've had space to cover in these two columns — but we've been away from music too long. Next month, assuming I can follow my own tips and get Emagic's new audio hardware working, we'll take a look at some arranging techniques that are possible only in an integrated audio/MIDI work environment. ■

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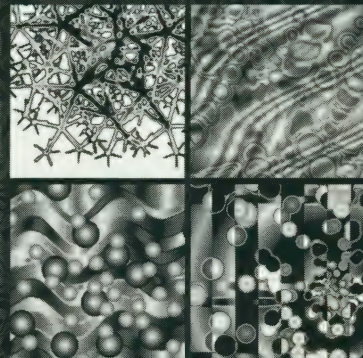
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CONTINUED FROM PAGE 160

baby, picking up after the baby, worrying about the baby . . . hey, we'll be there. We'll cope.

The thing that worries me, see, is that just "coping" isn't enough. I want more.

If everything we do as human beings is an opportunity for creative expression — and I put that belief right up there on the fact-of-life list with things like the sun rising in the east — then raising a child has got to be the most remarkable creative opportunity and challenge of them all.

And my fear . . . my fear is that I'll not live up to it.

Let me use an extreme example to make clear what I mean.

In a rather splendid book entitled *Son-Rise*, author Barry Neil Kaufman shared the experiences he and his wife Suzi went through after their third child was diagnosed, at 18 months, as severely autistic. The doctors and experts they consulted all counseled acceptance and surrender to the inevitable. Their son Raun, they were told, would never have an IQ above 30. He would never communicate normally, never connect with other human beings, never be able to live a life outside an institution. To their credit, the Kaufmans didn't accept these official pronouncements. Instead, they saw their son's predicament as a challenge to be overcome. Rather than simply wait for him to climb the impossibly high wall that stood between him and the rest of the world, they decided to actively join him on the other side.

Barry Kaufman's own words: "When he rocked, we rocked with him. When he flapped

his fingers, we flapped ours. When he spun plates on the floor, we spun plates with him. When he emitted high-pitched, warbling screeches, we learned his song and tried to sing it with him. We did not merely imitate him; we joined him fully, with great sincerity and enthusiasm."

I told you this was an extreme case. Here's how extreme: The entire Kaufman family, mother and father and two sisters, worked with Raun 12 hours a day, seven days a week, for over three years. They made one of the most extraordinary commitments I've ever heard of, and you know what? It worked. Together they found where their son was hidden away, built the right bridge, and helped him come across. Eventually every sign of autism faded. Raun went on to display a near-genius IQ, to get straight A grades in high school, to attend a good university, to excel in social sports . . . in other words, to have a life. And all because his parents decided to get creative instead of giving in to despair.

Leave out the autism. Leave out, in fact, any possibility that my someday child with Gloria will be physically or emotionally hampered in any way. Even if the babe were perfect of body, and a super genius to boot, the niggling fear in me would remain the same: When that future child is finally here, will I be able to join him/her in his/her world, and share it, or will I be so busy, so limited, so uncreative, so damned *adult*, that I make the mistake of waiting until he/she can speak to me in *my* language?

It would be incredibly easy to make that mistake. From exhaustion, from laziness, from overcommitment to other tasks in my life, from selfishness. I can't tell you how many times I've heard different parents tell me that their children finally got really interesting to them "when communication became a two-way street," as if those very same children hadn't been trying to talk to them at all before finally mastering the trick of words.

What a waste.

So what I've been doing, see, is prepping. I'm putting in as much infant time as I can with my friends' newborns. I'm striking up eye-and-facial-expression "conversations" with babies in strollers, babies in backpacks, babies in grocery store carts at checkout lines. I'm trying to relearn that dialect we all knew, so long ago, and have mostly all forgotten. It's incredibly tough, but then, why should I expect it to be any easier on me than learning the language of adults is for them?

There are those who say that childrearing is essentially selfish. There are even those who present it as a purely mechanical function, a set of evolved response patterns by which our genes make sure that they are passed on successfully into the future. For my money, though, it's the ultimate artistic collaboration. As much as I want to leave my mark on the world through films, novels, paintings, symphonies, and songs, I'll be happy enough come closing time if my progeny and I can honestly look at each other and say, "Fare thee well . . . partner." ■

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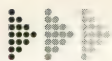
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ALTER EGO

DECODING THE HACKER MYTH

Hunting for fresh approaches to timbre? These guys have got a lock on fresh. The tempos are medium, the rhythms squarely in the bouncy 4/4 camp, the textures wide open but always multi-layered, the development of ideas solidly in the minimalist mainstream. What sets Alter Ego apart is their stunning array of great sounds — echoing scrapes, high-pass synth sweeps, sine-wave organ chime chords, nasty little dry beeps, and on and on. The mixes are fine, too: You can hear every detail. Maybe I just like it because the energy level isn't so amped that it makes me jittery, but this one's going home for an extended stay on my personal playlist. —Jim Aikin

(Eye Q Music, P.O. Box 46265, Los Angeles, CA 90046. Web: www.eye-q.com)



LEGION

LEVIATHAN

Low-key ambient electronica — sort of an Eno-trapped-in-the-basement-of-the-abandoned-factory vibe. In one section a depressed industrial beat gets going, but for long stretches there's nothing but the slow breathing of bell tones, punctuated by thunder on the other side of the mountain. While the liner notes list six separate titles, the whole production is indexed on the CD as a single 72-minute track, which tells you something. Consistently fresh and evocative. —Jim Aikin

(Side Effects, U.S. dist. by Soleilmoon, P.O. Box 83296, Portland, OR 97283. 503-335-0706. Email: soleilmoon@aol.com. Web: www.soleilmoon.com. European dist. by Dark Vinyl, P.O. Box 1221, 90539 Eckental-Brand, Germany. Email: 09126288396-0001@t-online.de)

JEAN MICHEL JARRE

OXYGENE 7-13

According to an interview in another magazine, Jarre is doing sort of an *hommage* to his own early work. If I hadn't stumbled onto that fact, I would have bet these were unreleased tracks from the vaults. The instrument list does include quite a lot of recent gear, however, along with the classic axes (including ARP 2600 and Mellotron).

Twenty years ago Jarre was a trailblazer, combining the proto-techno of Tangerine Dream with a Gallic romanticism all his own. The mixes are cleaner now, and that's an 808-style hi-hat ticking along in the background, but the rolling swells on string synth haven't changed, nor the burbling analog arpeggios, nor the bouncy beat. If you're a fan, you may be dialed in on this sound, but I was hoping Jarre would show more awareness of the shattering changes in electronic music during the last decade. —Jim Aikin

(Disques Dreyfus, dist. by Sony. Web: www.jeanmicheljarre.com)

TONY Z

GET DOWN WITH THE BLUES

This gifted B-3 talent shows off some terrific registrations and a lot of soul. When he solos, watch out! Z may start slow and mellow, but soon enough he rips out a few extra drawbars, kicks the Leslie into high gear, and takes no prisoners. Backed by guitar, bass, drums, and sax, he belts out a stirring assortment of blues instrumentals and soulful vocal numbers. —Mark Vail

(Tone-Cool Records, dist. by Rounder Records, One Camp St., Cambridge, MA 02140. 617-354-0700)

BILL EVANS

HIGHLIGHTS FROM 'TURN OUT THE STARS'

This is the live album that Evans was planning when he died in 1980. His last trio reached considerable heights of interplay, and Evans himself was in top form in spite of his declining health. All of these tracks, recorded at the Village Vanguard in June of that year, are on the six-CD box set *Turn Out the Stars*, but it's a pleasure to hear Evans's own picks. His continuing relevance is always a revelation. —Jim Aikin

(Warner Bros. Web: www.wbjazz.com)

O YUKI CONJUGATE

PRIMITIVE

All those guys with beatboxes are only pretending to be minimalists. O Yuki Conjugate are the real thing — at least, they were in the mid-'80s, when these tracks were recorded. Electronic loops and drones float along in a stream that's placid on the surface, but mysterious eddies hint at turbulence down in the mud along the bottom. Several tracks originally appeared on the album *Scene in Mirage* or the video *Peripheral Vision*, but many are unreleased. I wasn't expecting to be thrilled by an older sound, but these tracks are timeless. —Jim Aikin

(Staalplaat, P.O. Box 11453, 100GL Amsterdam, The Netherlands; P.O. Box 83296, Portland, OR 97283. Email: staal@euronet.nl, soleilmoon@aol.com)

ZETA

UNFINISHED

A welcome flashback to mid-'80s synth-pop. Zeta flies in the face of cyberpunk overkill with an unabashed New Romantic sound — big slow beats, clean-shaven vocals, and enough beeping analog fills to fill a stadium. The lyrics are frankly Christian, which may put off a few listeners, but the sound may even be inspiring enough to win converts. —Jim Aikin

(Liquid Media, P.O. Box 39911, Phoenix, AZ 85069. Web: www.zeta.net)

ERIC "SCORCH" SCORTIA

VITAL ORGAN

A mixed-mode CD/CD-ROM with nine instrumental audio tracks that you can play in any CD player, plus audio and video data that can be viewed on a Windows PC or color Macintosh. I didn't get a chance to try Scorch's Armadillo Stew, but I can vouch that his beefy B-3-laced Texas-style jazz, soul, and blues really cooks. —Mark Vail

(Heads Up International, P.O. Box 976, Lynnwood, WA 98046. 206-349-1200; fax 206-349-1166. Web: <http://headsup.com>)

SCOTT KIRBY, FRANK FRENCH, DAVID THOMAS ROBERTS

TERRA VERDE

Ragtime is alive and well in New Orleans. These three pianists take turns sauntering through a collection of rags, all of them seemingly new and most original. The style

is historically accurate; while there are a few modern harmonic twists, the mood is friendly rather than challenging. The recording quality is very satisfactory, and the performances are clean without being dry. Don't expect a barrelhouse romp — *Terra Verde* would fit in better at an ice cream social. I'll take the pecan sherbet, please. —*Jim Aikin*

(Pineland Recordings, 431 28th St., New Orleans, LA 70124. 800-771-7223. Web: kspace.com)

IAN BODDY

CONTINUUM

Ambient electronics — a double CD, no less, edited down from a seven-hour concert. While a couple of tracks rely on a minimally evolving drumbeat overlaid with sequenced beeps and tweedles, Boddy spends most of his time in deep space, seemingly bodiless. At worst, he sounds like the soundtrack of an old episode of *Dr. Who* (and that's not so bad, is it?). At best, he's capable of a kind of underwater grandeur. —*Jim Aikin*

(Something Else Records, P.O. Box 16, Consett, County Durham DH8 8YZ, England. Web: www.demon.co.uk/SomethingElse/IanBoddy.html)

TAJ MAHAL

PHANTOM BLUES

Eclectic, smokin', soulful blues that'll make it hard for you to sit still. I'd recommend it even if Bonnie Raitt and Eric Clapton didn't make personal contributions. Mahal gets the most out of Mike Weaver on B-3 and Jon Cleary on acoustic and Wuritzer electric pianos, Clavinet, guitar, and backing vocals. Also on black-and-whites are David Hidalgo playing accordion on the "Fats" Domino co-written "Let the Four Winds Blow" and Jon Brion manning another oldie-goldie but extremely rare Chamberlin on "Ooh Poo Pah Doo." —*Mark Vail*

(Private Music, BMG Entertainment, P.O. Box 429094, San Francisco, CA 94142-9094. Email: pmmail@bmgmusic.com. Web: www.private-music.com.)

OPTIGANALLY YOURS

SPOTLIGHT ON OPTIGANALLY YOURS

For some reason these guys are smitten with the Mattel Optigan, a prehistoric toy sample playback

machine — so much that Optigan sessions producer Mike LeDoux gave them the 40 hour-long 1/4" master reels used for the original Optigan discs.

This CD is a bit beyond lo-fi. Those Optigan sample discs are full of old record player static. Still, the combination of '60s cruise ship band and '30s swing group introduces oddly catchy music worthy of spending more time in the CD player than highly produced, original-as-a-box-of-rocks bands like Bush. The vocal harmonies are caramel-smooth, with comically random lyrics: "I can't believe what you've done with your hair. I'm impressed." Some cool Optigan snippets: Benny Goodman-style clarinet, exotic bird calls, and Hammond B3, accompanied by a real Schoenhut toy piano in "Stop Touching Me." —*Kylē Swenson*

(Cargo Music, 4901-906 Morena Blvd., San Diego, CA 92117-3432)



DAFT PUNK

HOMEWORK

With a video on MTV's AMP and a single on the dance charts, this French duo has been buzzing like a beehive lately . . . and for good reason. Daft Punk's debut is the musical equivalent of caffeine. One listen to "Da Funk" and you'll be humming its squelchy, squashed-bandwidth synth lead in your sleep. And if that doesn't get you, surely the throbbing breakbeats and bass lines will. But before you rush out and pick up a copy, be warned that this CD is not for those with short attention spans. Daft Punk takes their sweet time with most tracks, milking sampled and sequenced riffs for minutes on end before changing the scenery. Great in a club, and equally groovacious as background mood music. Just don't expect to be thrown curve balls every eight bars. —*Greg Rule*

(Virgin Records)

WE

AS IS

Take a nap in the ambient room with We. Even the occasional

spunky jungle beat keeps you sedated while tinkerbell keyboard flourishes loop on through. Beware, though: "Believe Porpoise" and "3/10th of the Population" may jar you awake with their more up-tempo drum pattering and cat/horn squelching. Sometimes a distant reverberated synth is interrupted by uncoiled chain-link swing sounds. But 70-plus minutes allow enough time to wind down your stress level 'til you fade at the carbonated drink pouring sample and whiz happily along the space zips. —*Kylē Swenson*

(Asphodel, P.O. Box 51, Chelsea Station, New York, NY 10113-51. Email: asphodel@interport.net. Web: www.asphodel.com)

DISSONANCE

DISSONANCE

Eurythmics go synthcore. The instrumental tracks grind pretty hard, but in place of the snarled/spoken male vocal that you'd expect in the genre, you get an impassioned female singer. Cat Hall's vocals are very processed, but not so much that it obscures her nuances. A fair quotient of spiffy electronic effects, too — burbling fills, high sweeps, distorted loops. It would be sexist to assume that they were all contributed by David Sebrind, the other half of the duo. He doesn't sing, so it's a good bet he's responsible for at least some of the racket. —*Jim Aikin*

(Hakatak International, 501 First Ave. N.E., Minneapolis, MN 55413. Dist. by TRG)

BOM

BOM BOM SHEVAYA

Bouncy electronic instrumentals with a hint of hip-hop, a dollop of dub, and plenty of clever change-ups in the arrangements. I was initially put off by the air of insectile friendliness, because the music doesn't seem quite *serious*, you know? The more I listened, the more interesting stuff made its presence felt. —*Jim Aikin*

(Spiffing, P.O. Box 725, Westbury, NY 11590)

DOGON

NOTDUNJUSTA

I feel guilty about reviewing so much ambient electronica this month — but so much of it is so darn *good*. Dogon specializes in gentle, understated beats, floating string synth, and occasional

enigmatic, eerily processed vocal samples. The CD art calls this music "EthnoNeuroTrance," not a bad tag. Even when the vibe is totally atmospheric and beatless, as in "Nicolas & Drisana," Dogon spices up the proceedings with some major/minor chord conflicts and a little random flanging. —*Jim Aikin*

(New Dog Records, 52 Colin P. Kelly Jr. St., San Francisco, CA 94107. Web: www.newdog.com)

BOOKS

BRAD HALL

THE VIRTUAL MUSICIAN

Proclaiming itself, "A complete guide to online resources and services," *The Virtual Musician* is a mixed bag. Written for musicians with little online experience, the book's best feature is its description of hundreds of Web sites devoted to music, organized by topic. The author's top-rated sites are specially marked. The book also describes musical resources on America Online, CompuServe, and Prodigy, which may help musicians to choose between them. The early chapters introduce computers and the Internet, but here the book begins to suffer from errors, ranging from harmless (mixing up "baud" and "bps") to outdated and confusing. (The claim that email "cannot send binary files" ignores the existence of attachments and MIME.) The section on Usenet is mediocre, listing "alt" newsgroups (some obsolete) to the exclusion of the official "rec" groups, and some descriptions bear little relation to their newsgroups. Finally, no list of Web URLs can remain current, but some in this book are years out of date.

The book includes a CD-ROM containing freeware and shareware programs for PCs and Macs, focusing on Internet-related utilities and music applications. Most if not all of these programs are freely available on the Net, and some are old versions (inevitable on any CD-ROM), but it's convenient to have them gathered in one place. Overall, *The Virtual Musician* is a fair resource for novice online musicians, as long as they read another on general Internet use. —*Dan Barrett*

(257 pp. plus CD-ROM, \$30. Schirmer Books, 1633 Broadway, New York, NY 10011) ■

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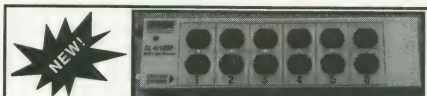
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BY CONNOR FREFF COCHRAN

The Oldest Profession

The following anecdote is included expressly for those given to obvious interpretations. Just remember that title up there at the top of the column, and read on. . .

A few years back, in San Francisco, at about 2 A.M., circumstance had me driving north toward the Golden Gate Bridge. Route 101 is all city streets through SF proper, but near the stately Palace of Fine Arts it finally busts loose and becomes quasi-highway, in the form of a two-mile-long access road leading to the tollgate of the Bridge. Just shy of this transition point between street and road-way is the next-to-the-last bus stop in San Francisco (the last being at the Bridge itself). This penultimate bus stop is not a happy place. Indeed, on cold, foggy nights it is a total drag to be stuck there, waiting, while the good folks at Golden Gate Transit establish whole new records for running behind their sporadic graveyard schedule. Been there, froze that. Not funny. Ever since several shivering eternities spent bus-commuting back to Marin from an East Bay dinner theater gig, I've made it policy to offer a ride to anyone whom I found standing, post-midnight, at this particular stop. That's why I pulled over. I noticed a silhouette in the mist, poised as though watching for something to arrive. My foot went to the brake immediately. The car stopped. I leaned across the front seat. I lowered the window. I called out, "Hi! Need a ride? How far are you going?"

This is about the moment it finally registered that the object of my good Samaritan impulse was not waiting for a bus, a cab, or even Godot, but for something else entirely, preferably with a well-stuffed wallet. Impressions: Long, strong legs. Short, tight skirt. Sleek, small handbag. Deep, deep cleavage. Big . . . brown eyes.

Despite my clear lack of commercial prospect, however, she seemed charmed by the naïve kindness of my offer. With a smile as sweet and guileless as a doting aunt's, and a voice like eider-down, she said "Gee thanks, honey, but — I'm working."

. . . And that, friends, is my one and only hooker story. Having disposed of it, let's tackle the title of this essay again without risk of running aground on the shoals of Beavis & Butthead-style sniggering. If the world's oldest profession *isn't* prostitution (despite several jaded centuries of slang association which claim precisely that), then what is?

Along the way I've heard several different suggestions, usually from people making a living from the modern equivalent of whatever endeavor they were backing as primal.

Politics, of course. Law. Moneylending. ("Sorry, Ook. You're shy two abalone shells interest on your payment for that coral necklace I loaned you. Gonna have to break your fishing spear and your — what'd we all decide to call those things? — oh yeah, knees.") Shamanhood. Hunting. Gathering. Cavepainting. Storytelling. Firetending. Big log beating. War.

The partisans for art-of-some-kind can make a pretty good case, what with bone and wood flutes regularly turning up in Paleolithic burial sites, and rock art from carvings to cave paintings being found all over the world. Tests of the decorations in the Chauvet Cave, near Avignon in France, place their creation at more than 31,000 years ago. That's solid evidence, even if the shaman



COURTNEY GRANNER

crowd do co-opt it to support their own case. But there are spearheads, and flaked stone or obsidian knives, that date back even further, not to mention the remains of mass animal slaughters. Going strictly by archaeological record would therefore seem to favor the Bashers-R-Us folks. You know — Human-Tool-Users-As-Killer-Apes, just like in *2001* but without the mysterious black monolith.

I, of course, have a different opinion. For supportive evidence of my point of view, all you need to do is open your eyes and look around your immediate neighborhood. See all those people? Well hey, where do you think they came from? Brawny Arnold Schwarzenegger, up there on the movie screen — can you imagine him as seven-point-something pounds of wailing infant, utterly unable to fend for himself? Acerbic George Will, lancing the body impolitic in magazine essays and television appearances — can you imagine him as the child he was in kindergarten, wrestling for the first time with the alphabet? How about Presidents Bill and Boris, trimming the sails on their respective nuclear-armed ships of state — can you imagine them not as the elected heads of great powers, but as little boys with scraped knees, baby teeth, and mud-covered faces?

Nope. The oldest profession is not making art, making war, or making love. It's raising children.

Of late I've been made forcibly aware of this by two things. Item #1, there has been a ward-full of first births among good friends of mine. Dave and Rhonda, meet Isaac. Justin and Sue, meet Shae. David and Lynn, meet Adam. Al and Diane, meet . . . well, any day now we'll know, and for the sake of gender balance I hope it's a girl. As for item #2, that one strikes a little closer to home. This month my wife Gloria and I are going off birth control. We're stepping out from behind the driver's seat and letting nature take the wheel.

Is all this exciting? Yes. Is it frightening? Hell, yes. But not for any of the reasons I would have guessed at, earlier. While I do blink slightly at the checklist of possible dangers, new responsibilities, increased costs, and expanded burdens, I know that we will deal with them just fine as they appear. My friends are doing precisely that in their brand-new families. Thousands of generations of human beings did it before us. Gloria and I will, certainly, do so in turn. Changing the baby, feeding the baby, burping the



Connor Freff Cochran lives mainly in Los Angeles and is gleefully involved with more projects than ever before. If you are interested in more of his explorations into creativity and life, just write and ask for a free copy of the Connor's Creation newsletter. Email: OptionsC@aol.com. Regular mail: 10061 Riverside Dr. #116, Toluca Lake, CA 91602.

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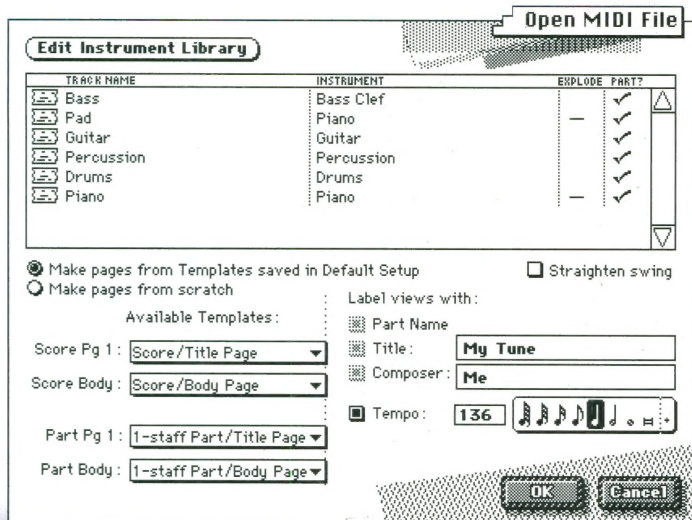
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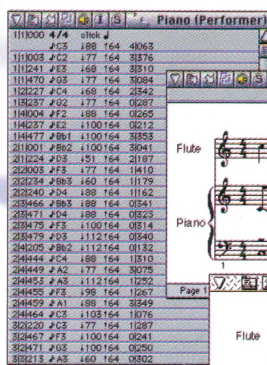
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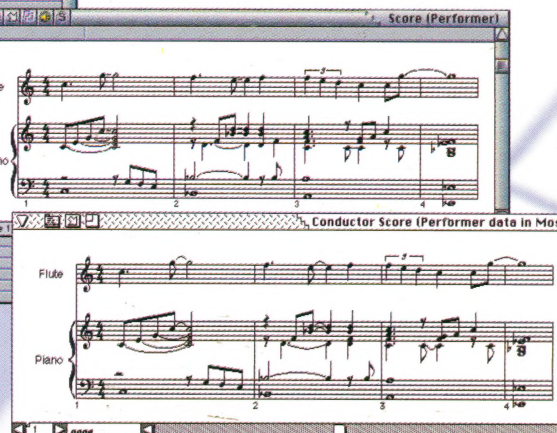
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